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PRACTICAL WORK IN GEOGRAPHY,

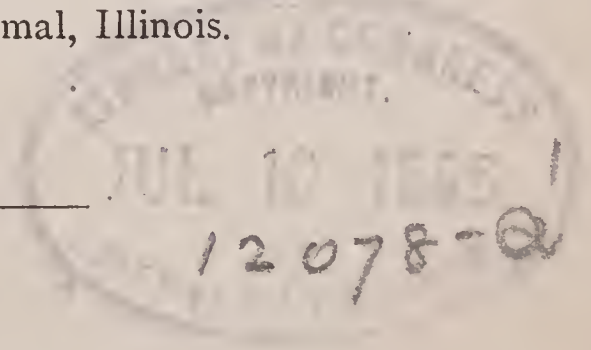
FOR THE USE OF
Teachers and Advanced Pupils.

BEING A GUIDE FOR THE YOUNG TEACHER IN TEACHING PREPARATORY,
ELEMENTARY AND ADVANCED WORK IN GEOGRAPHY, SHOWING
WHAT TO TEACH AND WHAT TO OMIT FROM THE
TEXT BOOKS.

29/50 ✓
✓ — BY —

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CHICAGO:
A. FLANAGAN, PUBLISHER.
1885.

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PREFACE.

In preparing this little work, I have tried to make it a guide for young teachers. The field of geographical study is so vast that it requires considerable thought to determine wisely what should be taught and what omitted. This book contains what seems to me a reasonable amount of the proper kind of work for each of the three departments—Preparatory (or Primary), Elementary and Advanced; and gives some suggestions in regard to the method of doing it.

I have been greatly aided in the preparation of this Manual by Lippincott's Pronouncing Gazetteer of the World (a work which every teacher of Geography should have on his desk), the various Encyclopedias and other works mentioned elsewhere in the book.

HENRY McCORMICK.

Normal, Illinois, May 11, 1885.

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SCHEME OF CHAPTER I.

Direction.	1. Absolute.	1. Cardinal points.	1. North.
			2. South.
			3. East.
			4. West.
		2. Semi-cardinal.	1. Southeast.
			2. Northeast.
			3. Northwest.
			4. Southwest.
	2. Relative.	1. Things near.	
		2. Things remote.	
Distance.	1. Children provided with one-foot rules.	1. Inches marked.	
		2. Teach one-foot, one-half of a foot, one-fourth, one inch.	
		3. Teach one yard.	
		4. Draw lines to indicate each length.	
		5. Children measure objects and give length.	
		6. Tests.	
	2. Method of teaching.	1. Rod.	1. Measurements in school-room.
			2. Distance between familiar objects near schoolroom.
		2. Mile.	1. Select familiar objects that are a mile apart.
			2. Tests.
Form.	1. Lines.	1. Vertical.	
		2. Horizontal.	
		3. Parallel.	
		4. Oblique.	
		5. Curved.	
	2. Angles.	1. Right.	
		2. Acute, or sharp.	
		3. Obtuse, or blunt.	
	3. Triangle.		
	4. Square.		
	5. Rectangle.		
	6. Circle.	1. Circumference.	
		2. Center.	

PART I.

PREPARATORY GEOGRAPHY.

CHAPTER I.

DIRECTION, DISTANCE, AND FORM.

Time of Beginning.—This work may begin at any time after the child enters school, and should begin as early as the middle of the second year. It should be regarded as a preparation for the study of geography rather than geography itself. But it is none the less valuable on that account. If properly done it will enable the pupil, at the suitable time, to enter upon the study of geography with an appreciation of the subject, which is lacking in those who begin the study without preparation.

Direction.—If the children do not already know the cardinal points, let those be taught first. Noon is a good time to introduce the subject. If at this time the children stand with their backs to the sun, their shadows will fall to the North. The point opposite the north is South. On their right is East, and on their left West.

To test their knowledge of these points they may be asked to face the east, west, and the south. When facing the east, what direction on their right? What on the left? In what direction will their shadows fall at sunset? At sunrise? Get them to point to objects in the schoolroom which are north of them, south, east, west.

When satisfied that the directions of these four points are fixed, you may tell them that the point half-way between the south and east, is Southeast; between the north and east, is Northeast; between the north and west, is Northwest, and that the point half-way between the south and west, is Southwest.

The children, having learned the eight points now named, should be asked to name objects in the direction of each, beginning with those in the schoolroom, and passing to things in the school yard, and others at a distance from the school building; to name the direction in which they travel in coming from their homes to school, and in going from the school building to the Post-office, or to any other prominent point that may be known to all, or most of them; the object being to fasten firmly these first, and perhaps, most important lessons.

DISTANCE.—The idea of distance should next be introduced. In attempting this, see that the children are provided with rulers a *foot* long, marked into twelve equal spaces. Ask them to draw on the blackboard, by the aid of these rulers, lines a foot in length, six inches, three inches, one inch. They will soon see the relation of these lines to one another.

A line three times the length of the ruler is a *yard*. Get them to draw lines a yard long, at first with the aid of the rulers, afterwards without, and see how nearly these lines will agree in length. They should also be asked to name objects in the school room, a yard long, a foot, half a foot, etc., and then measure the objects so as to test the accuracy of their guesses.

If the blackboard is long enough, place on it a line a *rod* in length. This the children may measure and see how it compares with the one a yard long. Then let them measure off like distances in other parts of the room, using the rulers at first, but discarding them after a while, so that you may deter-

mine the correctness of the concepts which they are forming of these several distances.

You can best impart the idea of a *mile* by naming some two objects which are that distance apart. These objects should be familiar to all in the class, and if they can be seen from the school room, it will be an advantage. In order that the children may have a correct notion of a mile, it is not at all necessary that they should be able to tell you, "A mile equals three hundred and twenty rods." They may be able to tell you this and yet not really know what a mile is. Remember, the work before you is to teach *ideas*, and not a mere form of words which, in many instances, are meaningless and empty.

FORM.—It may be that in the drawing class, or elsewhere, the children have already been taught *form*. If not, the subject should be introduced here. Begin by making a *straight* line and placing near it a *curved* one. A *vertical* line should have for its neighbor a *horizontal* line. These may be followed by *parallel* lines, both straight and curved, and by *oblique* lines.

It may be profitable at this point to review the work on distance, which can be done by having these lines made of various lengths.

The idea of *angle* should next be taught. Begin with the *right* angle, as this is the standard by which other kinds are determined and named. Show that the *acute* angle is sharper than the right angle, and the *obtuse* angle, blunter, hence the names. Let the pupils make several of each kind, and learn to name them rapidly.

By connecting the free ends of the lines forming an angle, a figure having three angles is formed. Show why the name *triangle* is given to this figure. Ask the pupils to point to each of the angles, and tell to which of the kinds it belongs. They should make several triangles; some with right angles,

others with obtuse angles, and still others with three acute angles.

Place a *square* on the blackboard, and get the children to see that its angles are right angles, and its sides, equal.

Near the square place a *rectangle*, and ask the children to point out any difference they may see between the two figures. Have your class draw them, both on their slates and on the board, and name objects whose sides are squares, or rectangles.

Describe a *circle* on the blackboard. Teach that the line you have just made is the *circumference*, and that the part of the surface of the board bounded by this line is the circle. All points in the circumference are equidistant from the center of the circle.

If you make these facts clear to your pupils, you will save them much confusion of ideas in after years.



SCHEME OF CHAPTER II.

- | | |
|---|--|
| 1. Children draw a ground plan of the schoolroom. | <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <ol style="list-style-type: none"> 1. Idea of scale developed. 2. Position of different sides shown. 3. Comparative length of sides. 4. Doors and windows. 5. Position of furniture. </div> <div style="flex: 2; margin-left: 10px;"> <div style="display: flex; align-items: center;"> <div style="font-size: 4em; margin-right: 10px;">{</div> <div> <ol style="list-style-type: none"> 1. On the blackboard, north side of room. 2. On slate. </div> </div> <div style="display: flex; align-items: center; margin-left: 10px;"> <div style="font-size: 4em; margin-right: 10px;">{</div> <div> <ol style="list-style-type: none"> 1. Slate on desk. 2. Top of slate points north as the children draw. </div> </div> </div> </div> |
| 2. Children draw the schoolyard. | <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <ol style="list-style-type: none"> Comparative length of sides. 2. Position of gates, well, sidewalks, flower-beds, etc., shown on drawing. </div> <div style="flex: 2; margin-left: 10px;"> <div style="display: flex; align-items: center;"> <div style="font-size: 4em; margin-right: 10px;">{</div> <div> <ol style="list-style-type: none"> 1. Judgment. 2. Measurement. 3. Scale fixed. 4. Drawing. </div> </div> </div> </div> |
| 3. Adjacent streets. | <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <ol style="list-style-type: none"> 1. Direction. 2. Where leading to. 3. Places of note. </div> <div style="flex: 2; margin-left: 10px;"> <div style="display: flex; align-items: center;"> <div style="font-size: 4em; margin-right: 10px;">{</div> <div> <ol style="list-style-type: none"> 1. Homes of the children. 2. Post-office. 3. Churches. 4. Court House. 5. Parks. </div> </div> </div> </div> |
| 4. River or creek. | <div style="display: flex; align-items: flex-start;"> <div style="flex: 1;"> <ol style="list-style-type: none"> 1. Source. 2. Mouth. 3. Course. 4. Right bank. 5. Left bank. 6. Island. 7. Peninsula. 8. Gulf or bay. 9. Plain. </div> </div> |

CHAPTER II.

LESSONS AROUND HOME.

Plan of the Schoolroom—The children having mastered the ideas of direction, distance and form, are prepared to use them and should be required to do so in making a ground-plan of the schoolroom. This will consist of as many straight lines properly united as the room has sides.

Before they can do this intelligently you must teach them the idea of *scale*, as used in geography. This is a delicate task and must be well accomplished if you hope for the best results thereafter. Tell the children that as you cannot draw a line on the board as long as the room, you will let an inch on the board stand for a foot of the length of the room, so that if the room is thirty feet your drawing will be thirty inches. And if the room is twenty feet wide the width of the drawing will be twenty inches.

In copying the drawing on their slates it will probably be necessary for the pupils to make a quarter or a half of an inch stand for an inch on the board. This, however, will cause no confusion if they once get the *idea* of scale clearly fixed.

The north end or side of a room should be represented by the line next to the top of the slate, paper or blackboard; after which the position of the south, east and west sides will readily be determined.

If circumstances permit, place the drawing on the north side of the room, so that in copying it the children must face in that direction. This will be an advantage.

Having drawn the walls, ask the children to point out the proper position of the doors and windows. This they should do from actual measurement of the walls and of the drawings.

No doubt you could do this work more rapidly and accurately than they can. It is not for your benefit, however, but for theirs. This is one way of determining whether they have mastered the idea of scale or not and if they are observing things for themselves, or depending on their teacher to observe for them—which is so often the case.

Ask the children to indicate on the drawing the position of your desk, the stove and such other articles as are usually kept in the schoolroom. Let them show the number of rows of desks, the number of desks in a row, their own desks and those of their friends.

The School-yard.—As soon as the schoolroom with its furniture is drawn with a fair degree of accuracy, considering the age of the pupils, the school-yard may be sketched. This also should be drawn to scale. If necessary, in order to make room for the sketch of the school-yard on the slate, the schoolroom must now be drawn on a different scale from the one used before, as it and the yard should be on the same scale.

On this sketch mark the position of the gate, well, walks, flower-beds, etc.

Cover up the drawing that you assisted in placing on the blackboard and have the pupils reproduce it on the board from memory. Remove the covering and have them compare their sketch with yours, pointing out wherein theirs is faulty. Continue this work until satisfied with the results.

Adjacent Streets.—If your school is in the city, place on the sketch a few of the principal streets, beginning with that on which the school building stands. Note their direction, and if they lead to any place of importance, call attention to the fact. If members of the class live on these streets, give them the privilege of showing the position of their homes. Mark the location of a few of the more important buildings, such as the Post-office, Court House, and Churches, also the Parks.

How many streets it will be profitable to study and sketch, you must determine for yourself. There is danger of overdoing the matter, and keeping the pupils learning the names of unimportant streets, when they should be engaged in more desirable work.

If you are teaching in the country, or in a country village, the children will aid you materially in deciding what to show on the sketch, as they are acquainted with all the important objects in the vicinity, and will be ready to suggest their names. Make them your partners in the work, and you will find their interest in it increasing from day to day.

RIVER OR CREEK.—But whether in city or country, be certain to call attention to any river or creek that may be in the neighborhood. It is by the banks of this stream they must study the Amazon, Ganges, Nile, and the other great rivers of the world, if they ever study them in the true sense of that term. It is not probable that many of them will ever see those streams, hence, if you would aid in forming proper conceptions of these, as well as of all others in foreign lands, this is your opportunity. Do not allow it to pass by unimproved. If you do, those mighty rivers that receive the waters from the hills and distribute them to the plains, that gladden the inhabitants of many lands by assuring them of bountiful harvests, and that carry the commerce of nations on their bosoms, may for years be nothing more to these children than crooked, black lines drawn across the map.

By this home stream you can teach what is meant by the *source* of a river, the *mouth* of a river, the *course* of a river, *right bank* of a river, the *left bank*, and the *bed* of a river. Here, also, you can help your pupils form proper notions of an *island*, *peninsula*, and *gulf* or *bay*.

In the same vicinity, the *plain* and *plateau* can be studied to advantage. And the neighboring *knoll*, assisted by the

vivid description of the teacher, will grow into a *mountain* when necessary.

Do not concern yourself greatly about the definitions of these terms at this stage of the work. Rather be solicitous about the *ideas* your pupils are acquiring. Are they such as will enable them in after years to form correct mental pictures of far-off lands and scenes? If so, the definitions will be given correctly at the proper time. Confusion of definitions is generally due to confusion of ideas.



SCHEME OF CHAPTER III.

- Map of Township. {
- 1. Shape.
 - 2. Size.
 - 3. Position of home city.
 - 4. Position of school.
 - 5. Rivers. {
 - 1. Direction from School.
 - 2. Where enter the Township.
 - 3. Where leave the Township.
 - 4. Course.
 - 6. Railroads. {
 - 1. Number.
 - 2. Where lead to.
 - 7. Other cities or villages.

- Map of County. {
- 1. Shape.
 - 2. Number of Townships.
 - 3. Position of home Township.
 - 4. County Seat. {
 - 1. Why so called.
 - 2. Direction from home.
 - 5. Rivers. {
 - 1. Direction from home.
 - 2. Course.
 - 3. Comparative size.
 - 6. Railroads. {
 - 1. Number.
 - 2. Where lead to.
 - 7. Other cities or villages.

- Map of State. {
- 1. Shape.
 - 2. Fix boundaries.
 - 3. Number of Counties.
 - 4. Position of home County.
 - 5. Rivers. {
 - 1. Number.
 - 2. Source.
 - 3. Course.
 - 4. Flow into what.
 - 5. Comparative size.
 - 6. Capital. {
 - 1. Why so called.
 - 2. Direction from home.
 - 7. Railroads. {
 - 1. Number.
 - 2. Where lead to.
 - 8. Important cities.

CHAPTER III.

TOWNSHIP, COUNTY AND STATE.

The Township.—Place on the blackboard a diagram a foot square. Tell the children that this represents the *township* in which they live and that it is six miles square.* Ask them to represent it on their slates or paper by a diagram six inches square. On what scale is the township drawn on the board? On the slates?

Indicate the position of the home city in the township and the position of the school in the city. In what part of the city is the school? In what direction from the school is the river? Has any one of the boys been fishing in it? Did he catch any fish?

By means of a sharp, bright line show where the river enters the township, the direction in which it flows and where it passes out. Let the children draw a similar line on their slates.

Mark the position and direction of the *railroads* that pass through the city. Do the children know of any other towns on these railroads? If they do, show their position if in the township. Should they be outside and of some importance, promise that at some future time you will *map* them.

This is a good time to introduce the word *map*. The diagram on the board which the children have copied on their slates is a map. It shows the shape of the township, the position of the city in which the children live and possibly of some others. It also shows the position of the rivers and railroads

*If the home township is not a square and of the size here described, modify the diagram so that it will show the correct shape and size.

with their direction. But it does not show an actual city with streets, parks and houses. Its railroads and rivers are simply lines and its pond or lake, if there is any, is only a portion of the board surrounded by an irregular line.

Impress upon your pupils the difference between the thing and its symbol. On the map are only symbols.

The County.—Adjoining the township now drawn are other townships, beyond these are still others and all are probably of the same shape and size. By grouping a number of these townships and, it may be, parts of others together, we form a county.

Show on your sketch the number of townships and parts of townships in your county. Indicate the home township and the city in which you live. Locate the County-seat and explain to your pupils what is meant by the term. Show one or two of the principal rivers in the county. Are they *navigable*? Do they furnish *water-power*? What articles are *manufactured* along their *banks*?

Mark the railroads learned in the township and show where they leave the county. Three or four other cities may be taken in addition to the county-seat and the home city.

If there are any hills in the county note their position, especially if in the neighborhood of the schoolhouse.

Do not attempt too much but do well what you attempt.

The State.—There is much difference of opinion among good teachers as to the advisability of teaching the geography of the state at this stage of the children's progress. If you decide that it is best for your pupils to know something of the state as a whole before leaving this preparatory work, the following plan is offered for your consideration:

"Our county is bounded by other counties, and these by still others, etc., etc. There are 102 counties in our State. *

* Illinois.

These differ greatly in shape and size. Who knows the shape of our county? How does it rank in size, among the largest, or the smallest? We will now make a map of our State, so that we may learn its shape.

You may all take your places at the blackboard. As high on the board as you can reach conveniently, draw a horizontal, dotted line, fifteen inches in length, for the northern *boundary*. North of this line is the State of Wisconsin. There is neither mountain range nor river between the two States. For most of the distance there is a road, half of which lies in either State; so that a person standing in the middle can have one foot in Illinois and the other in Wisconsin. There is nothing about it, however, to indicate that it is the boundary between two States. The line on the board simply shows the shape of the north end of the one State, and of the south end of the other.

From the east end of this line draw a continuous line five and a half inches in length, or a little over a third as long as the one already drawn, and extending east of south. This line is somewhat curved, and represents the shore line of that portion of Lake Michigan which borders on Illinois.

From the south end of the continuous line, and extending south, draw a dotted line three times its length. East of this line is Indiana.

South from the south end of the line just drawn the two States are separated by the Wabash River which rises in the State east of Indiana, flows southwest, in the main, until it becomes the boundary line, and then west of south to the Ohio River. The distance from the point at which the Wabash begins to form the boundary, to its mouth, equals two-thirds of the distance from that point to the lake.

Draw a line nine inches long and extending west from the mouth of the Wabash. The west end of this line marks a point in the Mississippi River. Parallel to this line and equi-

distant from it and the northern boundary of the State, draw another, twenty-two inches in length; this will pass through the widest part of the State, and its west end will mark another point in the Mississippi.

Having three points to guide you, you may now sketch the Mississippi River, being careful to show its principal bends, so that the west side of the State may be properly shaped.

Finish the outline of the State by sketching the portion of the Ohio River that flows along its border. Notice that this river separates Illinois from Kentucky, and that the Mississippi separates it from Iowa and Missouri."

The pupils will find it more profitable, and easier, to sketch at first from dictation as indicated above, and afterwards from measurements and observations by themselves, than by any system of triangulation or squares with which the writer is acquainted. It takes about as much time and labor to make the "frame work" as it does to make the sketch; and when made it aids but little. Besides, such drawing has but slight educational value; there is too much machinery about it.

Mark the position of the home city. Home is the place the children know best, and by which they will locate all others. Place two or three of the principal rivers of the State on the map, showing their direction, and into what they flow. Locate the county-seat, and in addition, the capital and a few of the most important cities.

If the home railroads pass to any of these cities, indicate the fact on the sketch.

This will make the map full enough for the present, and afford you a good foundation on which to build hereafter.



SCHEME OF CHAPTER IV.

Object Lessons.

- | | | |
|----------------------------|---|--|
| 1. Purpose. | { | 1. To prepare pupils to interpret the map correctly.
2. To enable pupils to appreciate definitions. |
| 2. On Mining and Minerals. | { | 1. Coal. { <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> 1. Found in what part of the State.
 2. How obtained.
 3. Its importance. </div> |
| | | 2. Other minerals. |
| 3. On Manufactures. | { | 1. Meaning of { <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> 1. Manufactures
 2. Manufacturer
 3. Manufactory. </div> |
| | | 2. Articles manufactured near home. |
| 4. On Climate. | { | 1. Cold day leads to talk on cold countries. { <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> 1. Houses.
 2. Food.
 3. Dress.
 4. Manner of travel. </div> |
| | | 2. Warm day leads to talk on warm countries. { <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> 1. Houses.
 2. Food.
 3. Dress.
 4. Food easily obtained.
 5. Productions. </div> |
| 5. On Agriculture. | { | 1. Meaning of term.
2. Articles cultivated near home.
3. Articles cultivated in foreign countries. |
| 6. On Commerce. | { | 1. Meaning of term.
2. How carried on.
3. Benefits. |

CHAPTER IV.

OBJECT LESSONS.

A pleasant and profitable way of closing the Preparatory Geography is by a series of object lessons on common things. If the topics are wisely chosen and given in an interesting manner they will prove of great value. It is not necessary that they should follow each other in any special order. The order should be determined largely by circumstances. The purpose is to prepare the pupils to appreciate definitions which they will afterwards meet in their text-books, and which without this preparation would be to them for years nothing but words.

Mining and Minerals.—The building of a coal fire will suggest several lessons on this topic. The coal which keeps the schoolroom and the homes of so many of the children warm in winter is a *mineral*. If there is no coal-mine in the neighborhood, it may be necessary to tell them that coal is obtained by digging into the side of the hills or down into the ground several hundred feet. The men who dig the coal are called *miners* and the digging is called *mining*.

Picture to your pupils these miners working underground, each with a small lamp fastened to his hat. Describe the streets and alleys they are forming, the pillars left to support the roof, the animals hauling the coal to the opening or *shaft* and the method of raising the coal to the surface.

If coal is found in your State show on the sketch the limits of the coal-fields.

How many kinds of coal are there? Are they all found in your State? If not, which kind is found? With which kind is the schoolroom heated? &c. What is charcoal?

These items will interest your class and easily lead to other minerals, the manner of mining them and their uses.

MANUFACTURES.—One who makes anything is said to *manufacture* it, and he is a *manufacturer*. The blacksmith makes horseshoes, wagon-tires and other articles, hence he is a manufacturer. The men who make wagons, plows, reapers, mowers, pumps, etc., are manufacturers. Some make carpets, calicoes, silks and other kinds of cloth; they, too, are manufacturers. The buildings in which the articles are made are *manufactories*.

Are the men who make boots and shoes manufacturers? Those who make tables and chairs? What articles are manufactured in your neighborhood?

CLIMATE—Excellent opportunities for teaching the idea of climate will present themselves through the school year. A cold winter's day is a suitable time to state that in some countries the most of the days are as cold as that. The people dress in skins in order to keep warm. Many of them live in snow houses much of the time and travel in sleds drawn by dogs. It is too cold to cultivate the land, consequently the people have no corn, wheat, oats or vegetables except what little may be sent them from other countries. They live chiefly on fish and meats of different kinds.

On a hot day you can call attention to the fact that some countries have hot weather throughout the year. The people do not need warm houses, and wear but little clothing. Various kinds of crops are produced in abundance and with little labor. Many food plants and fruits grow without being cared for by man. The children never coast nor skate, nor have the pleasure of building snow forts or of snowballing one another.

AGRICULTURE.—The man who plows the ground, puts in the seed and harvests the crops is engaged in *agriculture*, or farming.

What are the principal crops cultivated in this neighborhood? In this County? In this State? Does coffee grow in this state? How does it grow? From what is sugar made? Does that grow in this State? Have you seen any of it? How does tea grow? Does it grow in this State? Where does it grow?

COMMERCE.—The children will now see that we use many articles such as coffee, tea, sugar, lemons, oranges, &c., that do not grow in our country. The same is true of some of our clothing and of much of the furniture in our homes; the materials of which they are made are not produced in our State. Yet we should not like to do without them. So we sell what we do not need of the articles produced and made in our State, and buy the other necessary articles from men who bring them from other states and countries. This buying and selling is *commerce*.

These few object lessons will suggest others on the same or kindred topics to the thoughtful teacher. If judiciously managed they will prove to be excellent *appetizers* for the fuller meal which is to follow, causing pupils to anticipate it with pleasure and partake of it with a zest and heartiness to which they would otherwise be strangers.

Note: Monteith's Easy Lessons in Popular Science contains much valuable matter for this class of work.



SCHEME OF CHAPTER I.

1. Introductory Remarks. $\left\{ \begin{array}{l} 1. \text{ Leading to definition.} \\ 2. \text{ On use of text-book.} \end{array} \right.$

2. Earth.
- 1. Shape. Spherical. A few simple proofs.
 - 2. Motion.
 - 1. On its axis—Day and night.
 - 2. Around the sun—Change of seasons.
 - 3. Land.
 - 1. New World, or Western Hemisphere.
 - 1. N. America.
 - 2. S. America.
 - 2. Old World, or Eastern Hemisphere
 - 1. Europe.
 - 2. Asia.
 - 3. Africa.
 - 4. Australia.
 - 4. Water.
 - 1. Oceans.
 - 1. Atlantic.
 - 2. Pacific.
 - 3. Indian.
 - 4. Arctic.
 - 5. Antarctic.
 - 2. Seas.
 - 3. Gulfs.
 - 4. Bays.

3. Continents.
- 1. Compared.
 - 1. Size. Rank of each.
 - 2. Position.
 - 3. Shape
 - 1. Resemblances.
 - 2. Differences.
 - 4. Contour
 - 1. Principal Projections.
 - 2. Principal Indentations.
 - 2. Grouped
 - 1. In pairs.
 - 1. N. America and S. America.
 - 2. Europe and Africa.
 - 3. Asia and Australia.
 - 2. In threes.
 - 1. Three Northern.
 - 1. N. America.
 - 2. Europe.
 - 3. Asia.
 - 2. Three Southern.
 - 1. S. America.
 - 2. Africa.
 - 3. Australia.

PART II.

ELEMENTARY GEOGRAPHY.

CHAPTER I.

THE EARTH AS A WHOLE.

With this chapter begins what may be properly termed Geography. In city schools the children are likely to have had the work treated of in Part I; but in country schools they are more likely not to. The forced migratory habits of the average teacher in the rural districts lead him to conclude that, although this work is in itself valuable, and may profitably be done in the city, in the country it is impossible. Hence, it is seldom that he attempts to teach anything not found in the text-book. Indeed, he would regard such an attempt as presumptuous. The book is to him all-sufficient, and he is often more anxious to teach that, than he is the subject of which it treats. But this is not true of all. Many of the school-houses which dot our prairies and hill-sides are occupied by noble men and women who are doing as intelligent and effective teaching as is being done in any city school in the land. All honor to them!

Use of the Text-book.—Still, in the average country school, it is seldom that anything is done in geography before the children are supplied with the text-books. Consequently

the teacher can only introduce, from day to day, such topics from the preparatory work as are necessary to a proper understanding of the lesson. Not to use the books would be heresy in the estimation of many of the parents, and might be discouraging to the children.

They have come to school the first morning of the term somewhat elated at the thought of beginning a new study. They have been examining the maps and pictures, and have concluded that this book is "nicer" than any they have had heretofore and much more likely to give them pleasure. Do not spoil this anticipation by telling them that they are not ready to use the books, and will not be for a year to come, as they must take the Preparatory Geography first. But go to work, determined to do the best you can under the circumstances, and to improve the circumstances themselves, as the year progresses.

Neither must you render their introduction to the study spiritless by assigning as the first lesson, column 1, page 1, simply because it comes first. A better way is to begin with a pleasant talk about the subject—its beauties and benefits. But do not talk at random. The best extemporaneous talks are those that are carefully prepared beforehand. Lead gradually to the definition of geography, by giving the pupils to understand that the study tells about the earth, its shape, movements, countries, people, etc.

Shape of the Earth.—In attempting to give the class a just idea of the shape of the earth, it is very desirable to use a globe, although a ball, an orange, or an apple will answer the purpose; either represents the earth in shape. By the earth we mean the world with all its land and water, cities, farms, etc. No doubt, questions will arise as to why the earth does not seem round. In answer to such, cover all but a small part of the surface of the globe and ask if that seems round.

Why not? Owing to the same reason the earth does not appear round, as the part of its surface that we can see at any time, compared with the whole, is much smaller than the part of the globe left uncovered is of its entire surface. If this is not sufficient, have the children read a few of the simplest proofs of the earth's rotundity given in their books, unless better occur to you, but do not enter into long, philosophical explanations, which are exceedingly unphilosophical, considering the attainments of the class. For the same reason say nothing about the earth's oblateness at this time. "The flattening at the poles" is a favorite topic with many teachers. They never weary of airing their knowledge of the subject both in season and out of season—generally out of season, showing conclusively that the earth is not the only thing flattened at the poles. Your opportunity for teaching this truth will arrive in due time; be strong enough to wait till then.

Motions of the Earth.—Having fixed the form of the earth, pass at once to its motions, by making the somewhat startling announcement that the sun stands still and that its seeming motion is caused by the actual motion of the earth. The earth *rotates* on its axis. The earth's axis is the *line* on which it rotates. It is not an axle, but if you are not careful the children will not see the difference between the two terms.

The *poles* are the ends of the axis. One is the *north pole*, the other the *south pole*. Evidently the axis must extend north and south. The directions east and west should be determined, on the globe, and a thorough review of the whole work on direction should be instituted here. If the subject is now brought before the class for the first time, the method* already described should be resorted to.

The earth rotates on its axis from west to east. Show that to this rotation are due day and night. By letting some sta-

*Part I, Chap. I.

tionary object represent the sun (unless very inconvenient it should be larger than the globe) and causing the globe to rotate slowly on its axis, the children can be made to understand that about half of the earth's surface is in the light and half in the darkness continually; that these halves are constantly changing as the sunlight and shadow chase each other around the earth. The rotation of the earth on its axis is called its *daily*, or *diurnal* motion. Why? Show why the sun seems to rise in the east and set in the west.

The earth not only rotates on its axis causing day and night, but it also revolves around the sun; the two motions are constantly going on. The revolution of the earth around the sun is called its *annual* motion. Why? It is well enough to state that to this motion is due, in a measure, the *change of seasons*. But it is not wise to attempt an explanation of this phenomenon. It is best to defer Astronomical Geography, as a whole, until the end of the course, bringing in only what may be needed as the work progresses.

Land and Water.—Call attention to the different colors on the globe. The red or brown represents the part of the surface that is land, the blue or green the part that is water. But these colors do not always represent the same things on all globes. The land may be represented by any color, and so may the water. Let the pupils examine the globe carefully and tell you what relative portion of its surface represents land and what portion water.

The Hemispheres.—Being able to distinguish the land from the water, they probably will notice that nearly all of the former is in two large masses. One of these is called the New World, the other the Old World. Tell them in a few words why these names are used. Introduce and define the term *hemisphere*, using the book as far as you think advisable, but not becoming its slave. Lead your pupils to see the dif-

ferences between the two worlds both in size and shape. They will observe that the land in the New World or Western Hemisphere, extends from northwest to southeast, and is long and narrow; while in the Old World, or Eastern Hemisphere, nearly all the land is crowded together. Introduce and define the terms *ocean* and *sea*; name a few of these bodies, locating them with reference to the land and to each other.

The Continents.—Observe that the New World is cut nearly in two; each of the pieces is a *continent*. Define continent, and teach that there are six of them. You will find the number convenient, and in accordance with the teachings of the best geographers. These two are connected by a narrow strip of land called an *isthmus*. What is the name of this isthmus? Of each of the continents? How are they situated with regard to each other? Do they look any alike? Point out all the resemblances you see. Do you see any differences? What are they?

Outline Maps.—This part of the work is very important and should not be done too hurriedly. And in order that it may be done to the best advantage a large outline map of the world should be hung in sight of the class. Nearly all schools are supplied with such. If yours is not, a few yards of muslin and fifty cents invested in ink and a camel's-hair brush, with a little perseverance on your part will enable you to make one that will answer the purpose. For the value of a map in teaching does not depend upon its costliness nor upon the multitude of places marked on it. On the contrary, the fact that it has *nothing* upon it but what is to be *learned* is a positive advantage. Try it.

Scale.—When making the change from the globe to the outline map review carefully the subject of *scale*. Children

are liable to suppose that the map of a continent must always and in all places be of the same size, since the continent itself does not vary. Guard against this wrong notion or it will cause confusion.

Teach that the northern part of the continent or country is towards the top of the map; also that there is no connection between the elevation of a place and its location on the map. You will find this necessary, as pupils, even the larger ones, almost invariably say they are going down a river when going towards its source, if it happens to flow towards the north.

Comparison of Continents.—Return to the New World and make the comparison of the continents as full as the ability of your pupils will justify. The triangular form, wide at the north, narrowing towards the south, the situation of the longest side in each, the shortest side, the great bend in the west side will attract the attention of the children. Aim to fix in their minds a correct picture of these continents. With such a picture firmly fastened in the memory they are prepared to enter intelligently at the proper time upon the further study of the Americas. Without it they will only be groping in the dark. *Geography is pre-eminently the study of pictures*, and success in teaching it depends largely upon the use of the imagination. The other four continents should be studied in like manner.

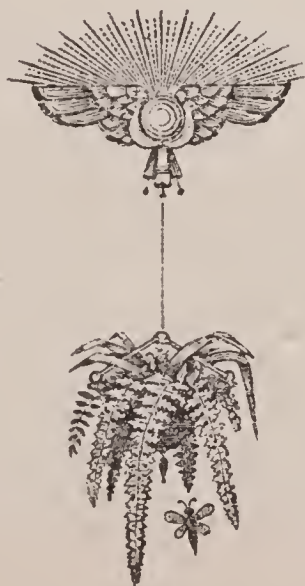
The six continents may now be arranged in pairs—a northern and a southern one in each. Let the pupils name those in each pair and point out in which pair the continents look most alike, in which least, which one of each pair is the larger, which is the largest of the six, the next largest, etc. But while holding them for the rank of each continent as regards size, they should not be required to learn the areas, as such work would be worse than meaningless at this time.

Grouping of Continents.—You can next put the continents in two groups of three each—a northern and a southern. The pupils should then be asked to name those in each group, the middle one of each, and the direction of any one from any other. Let them also name and locate a *few* of the principal islands, peninsulas, gulfs or bays belonging to each continent, defining each new term as introduced, and reviewing the others as opportunities offer.

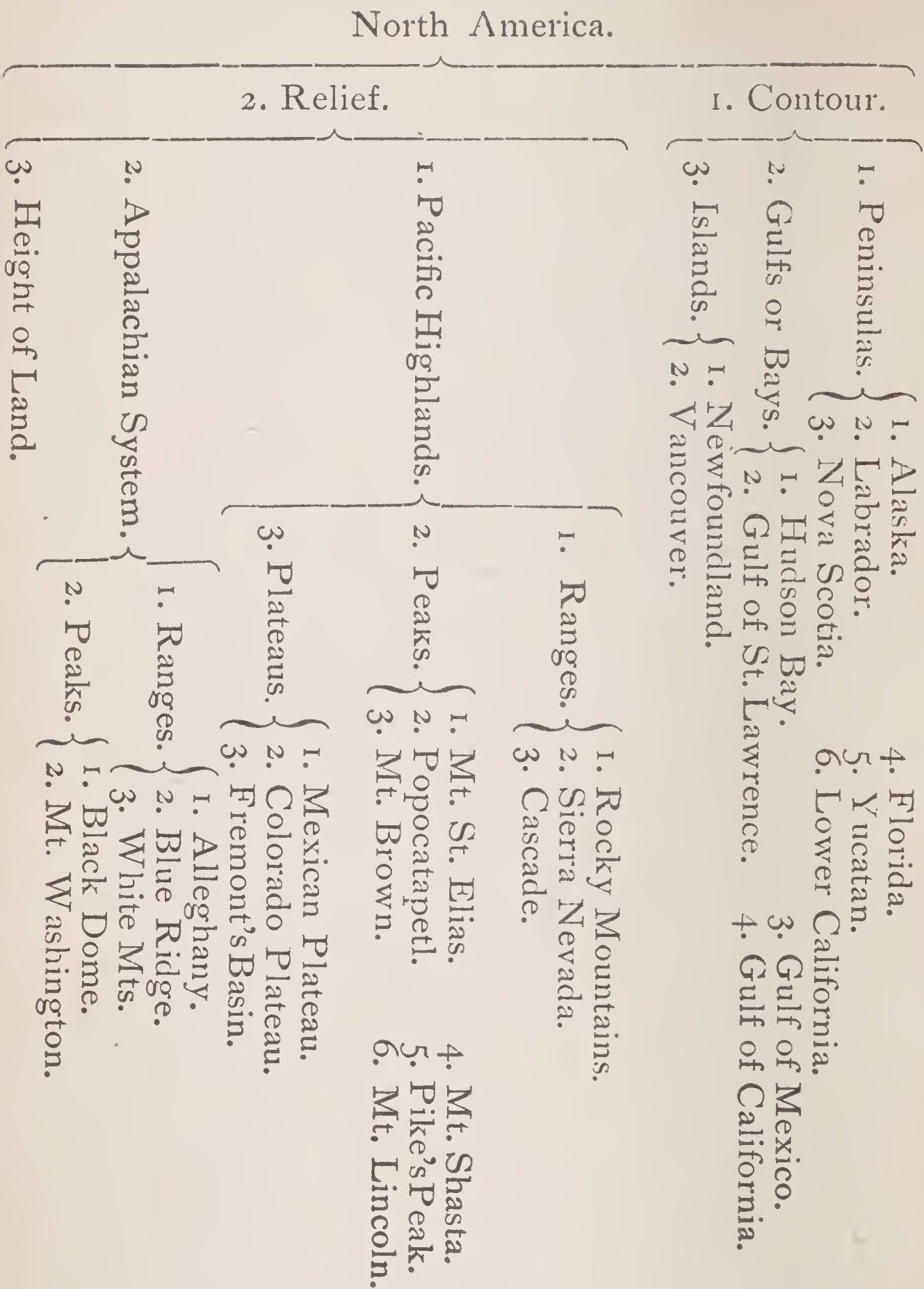
Definitions.--See to it that the definitions are not empty words, to be forgotten in less time than it takes to learn them. The teacher who does not earnestly strive to lead the thoughts of his pupils from the definition to the thing defined, from the symbol to the thing symbolized, cannot be too strongly condemned. With great propriety may his pupils cry out in agony of spirit, "O, wretched beings that we are! Who shall deliver us from the body of this death!"

Value of Genuine Curiosity.--The children are likely to be agreeably surprised by the frequent occurrence of the number three. The three pairs of continents, three continents in a group, the three great gulfs on the western coasts of the southern continents, the three large peninsulas on the south of Asia, three south of Europe, and the three great seas in the center of the Old World, will be likely to excite their curiosity. And who does not know that the awakening of genuine curiosity is of great value in educational processes? This curiosity if directed wisely will beget mental activity, without which but little can be effected. It frequently happens in the experience of every teacher that the dead must be brought to life before the subject can be taught with any profit to the pupil or pleasure to the teacher.

Feasibility and Practicalness of the Work.-- But you ask, can the children at this point in their advancement form even an approximately correct mental picture of the earth. The answer is yes. It is no harder to do so than it is to form an equally accurate picture of Illinois or of some of its counties. Yet some teachers, who may reject this work as impracticable, will labor earnestly in aiding their pupils to form a mental picture of their county and state. And when formed, these pictures, as the basis of future work, have not the value that the picture of the earth as a whole has. This is the most practical work that can be done, as it is the foundation upon which all true study of geography must rest. If a boy can remain in school but a few years it is of far more importance to him to have a good frame-work around which to arrange the many items which he will gather from reading works of travel, the leading periodicals, and from various other sources than to have a large number of disconnected facts which he manages to retain in a chaotic condition until he leaves school and then forgets. The latter is what, as teachers, we have mainly concerned ourselves about heretofore, because of our mistaken notion as to the practical. It is time there was a change.



SCHEME OF CHAPTER II.



North America Continued.

3. Drainage.		
1. Pacific Slope. Rivers.	<div><div>1. Yukon.</div><div>2. Columbia.</div></div>	3. Colorado.
2. Atlantic Slope. Rivers.	<div><div>1. Hudson.</div><div>2. Delaware.</div><div>3. Susquehanna.</div></div>	<div><div>4. Potomac.</div><div>5. James.</div><div>6. Savannah.</div></div>
3. Arctic Slope.	<div><div>1. River.</div><div>2. Lakes.</div></div>	<div><div>1. Great Bear.</div><div>2. Great Slave.</div><div>3. Winnipeg.</div></div>
4. Mississippi Basin. Rivers.	<div><div>1. Mississippi.</div><div>2. Missouri.</div><div>3. Ohio.</div><div>4. Tennessee.</div><div>5. Arkansas.</div><div>6. Red.</div></div>	
5. St. Lawrence Basin.	<div><div>1. River.</div><div>2. Lakes.</div></div>	<div><div>St. Lawrence.</div><div>1. Superior.</div><div>2. Michigan.</div><div>3. Huron.</div><div>4. Erie.</div><div>5. Ontario.</div></div>
4. Countries.	<div><div>1. The United States.</div><div>2. British America.</div><div>3. Mexico.</div><div>4. Central America.</div><div>5. The West Indies.</div><div>6. Danish America.</div></div>	

CHAPTER II.

NORTH AMERICA.

CONTOUR.—Review carefully what has already been said about North America, and study more carefully its *contour*. Its principal peninsulas are Alaska on the northwest, Labrador on the northeast, Nova Scotia on the east, Florida and Yucatan on the southeast, and Lower California on the west. The chief gulfs are Hudson Bay, Gulf of St. Lawrence, Gulf of Mexico, and the Gulf of California.

These projections and indentations are all that it is advisable to take at present. They are the ones that give character to the coast-line, and the object now is to learn that. The islands of Newfoundland and Vancouver are so near the mainland that it is well to notice them in this connection, and observe their situation with reference to each other and to the Gulf of St. Lawrence.

Relief.—Explain to the class what is meant by *relief* in geography; and if the maps in use are colored to show difference in elevation, call attention to the fact.

The Pacific Highlands consist of a high *plateau* which extends from the Arctic Ocean to the southern end of the continent. Its general elevation increases towards the south, the highest average being in southern Mexico; from there it descends to the Isthmus of Panama. The width of the plateau varies from one and a half to three times the width of Illinois at the widest part. On it are several mountain *ranges*, the principal ones being the Rocky Mountains, Sierra Nevada, and the Cascade. The highest *peaks* are Mt. St. Elias, Popocatepetl, Mt. Brown, Mt. Shasta, Mt. Lincoln, and Pike's Peak.

The Atlantic Highlands extend along the Atlantic Ocean, at a short distance from it, and are not near so high or so wide as those on the west. In the north they consist of several disconnected groups, and in the south of well marked ranges. Of these the Alleghany and Blue Ridge are the principal ones, and the White Mountains form the leading group in the north. The most elevated points are the Black Dome, Mt. Washington, and Mt. Marcy.

Lying between these two systems of highlands is a vast plain extending from the Arctic Ocean to the Gulf of Mexico. Through its center passes the Height of Land connecting the Highlands of the Atlantic and Pacific; it forms the *watershed* between the rivers flowing to the north and those that flow south. The Height of Land is but slightly elevated in any part of its course, and in some places is so low as to be hardly distinguishable.

Drainage.—When the pupils have mastered the relief of the continent, they will have little or no trouble in understanding its *drainage*. They will see that the direction of the mountains determines that of the rivers. Make sure that they do.

The Pacific Slope is that portion of the continent whose waters flow into the Pacific Ocean; its principal rivers are the Yukon, Columbia, and Colorado.

The Atlantic Slope lies east of the Appalachian or Atlantic Highlands, and its rivers flow into the Atlantic Ocean. The leading ones are the Hudson, Delaware, Susquehanna, Potomac, James, and Savannah. Are they long or short? Why?

The Arctic Slope extends north from the Height of Land; its chief river is the Mackenzie. The Great Bear, Great Slave, and Winnepeg are its three most important lakes.

The Mississippi Basin includes all the land drained by the Mississippi River and its tributaries; its principal rivers are

the Mississippi, Missouri, Ohio, Tennessee, Arkansas and Red.

By the St. Lawrence Basin is meant all the land whose waters are carried to the ocean by the St. Lawrence River. The rivers in this basin, with the exception of the one which gives it its name, are not of sufficient importance to demand much attention at present; but its lakes are the most important in the world. Lakes Superior, Michigan, Huron, Erie, and Ontario constitute over one half the fresh water of the globe; and the first is the largest body of fresh water in the world.

Drill thoroughly on this work. Do not leave it until convinced that the class has mastered it. Thorough work here will make what is to follow bright.

Sketching.—To aid in fastening the work let the pupils use the chalk freely. Do not hold them for every little bend and turn in the coast-line, and so discourage them. They can by reasonable study and practice acquire power to sketch a short piece of coast each day, showing the projections and indentations which they have learned; and in a few days they will be able to draw the continent as a whole.

A heavy line nearly parallel to the Pacific and a short distance inland, may represent the Pacific Highlands. Another drawn near the Atlantic will represent the Appalachian System or the Atlantic Highlands. A third, connecting these two will mark the position and direction of the Height of Land. Let the pupils now point out each of the great drainage systems, reciting the rivers and lakes in each.

"Molding,"—You will find it profitable to introduce "molding" at this point. A small quantity of foundry sand, a table with upturned edges, and a few shallow tin pans are all the necessary appliances. If it is not convenient to get foundry sand, common sand thoroughly sifted will answer. By being slightly moistened, it can be managed so as to show the outline and vertical forms.

The writer has a friend who sends her class out into the school yard, and has the boys and girls, with spade in hand, mark out peninsulas, islands, continents, etc., showing relief and drainage. She says the results are generally satisfactory. Have you tried this plan, or something similar? Why not?

Political Geography.—The countries of North America in the order of their importance, are: The United States, British America, Mexico, Central America, the West Indies, and Danish America. Our country is the United States. It is situated in the middle of the continent and reaches from the Atlantic Ocean to the Pacific. It is bounded on the north by British America which is about the same size; on the south by Mexico, which is smaller, and by the Gulf of Mexico.

British America, although as large as the United States, is not nearly so important, the northern half of it being so cold and barren that but few people live there. The southern part of the country has a *climate* resembling that of the northern part of ours, hence the crops are about the same. Most of the people dress as we do, and speak the same language. The principal river is the St. Lawrence to which reference has already been made. The principal cities are Ottawa, the capital; Montreal, the largest city; and Québec, which is strongly fortified.

Mexico, being south of us, has a much warmer climate than we have, especially in the lowlands bordering on Gulf of Mexico and the Pacific Ocean. The high plateau which forms the largest part of the country has a very pleasant climate. (Be prepared to show the effect of altitude upon climate.) The country produces all kinds of crops that ours does, and some that we cannot profitably cultivate. Its mountains and hills are rich in gold, silver, and mercury, large quantities of which are mined annually. The people speak the Spanish language, and differ considerably from us in dress and looks. The principal cities are Mexico, the capital; and Vera Cruz, the leading seaport.

Next on the south is Central America, consisting of six countries, which, taken together, are much smaller than Mexico. The climate is hot, and the crops are such as are common to all warm countries. They differ more from our crops than do those of the other countries of the continent. The people speak the Spanish language and resemble the Mexicans in looks and dress.

South of the United States, and east of Mexico and Central America, are the West Indies, consisting of about one thousand islands. Some of these are very important, especially Cuba, from which we receive large quantities of sugar, oranges, lemons, pine-apples, and tobacco. Havana is the principal city, and is situated on the west end of the island of Cuba.

Northeast of British America is Danish America, consisting of Greenland and Iceland. These are of so little importance to us or to the world at large, that they need receive but little attention at present. But if you feel that you must do more than is here indicated, you can notice the extreme cold, and the great efforts the inhabitants have to make to obtain a livelihood. Their condition in this respect may be contrasted with that of the inhabitants of the West Indies.

You will find it profitable to drill on this work until the class is able to begin at either end of the continent and name rapidly the countries in their order, giving the few facts here suggested about each. Doubtless some will regard the work as too meager. It is all, however, that it is advisable to give at this time, and more than many classes now get as the result of weeks of study upon those countries. After a while, when the pupils have acquired a knowledge of the geography of their own country, and in so doing have grown strong, it may be well to take them over this ground again. For the present, the work is full enough.

Definitions.—Teach these definitions:

A great circle of the earth is one that divides it into two equal parts.

A small circle of the earth is one that divides it into two unequal parts.

The *equator* is a great circle of the earth perpendicular to its axis.

Parallels are small circles of the earth parallel to the equator.

Meridian circles are great circles of the earth passing through the poles.

Meridians are semi-circumferences of meridian circles, terminating at the poles.

Latitude is distance north or south of the equator.

Longitude is distance east or west from any given meridian.

Explain to the class what is meant by climate, and show that the climate of any place depends chiefly on its distance from the equator and its altitude.



SCHEME OF CHAPTER III.

The United States.	1. Boundaries.			
	2. Relief.			
	3. Climate.			
	4. Productions.	1. Mineral.	1. Gold.	
			2. Silver.	
			3. Lead.	
		2. Agricultural.	4. Copper.	
			5. Iron.	
			6. Coal.	
			7. Petroleum.	
			1. Corn.	
			2. Wheat.	
			3. Cotton.	
			4. Oats.	
			5. Barley.	
			6. Rye.	
		3. Manufactured.	7. Tobacco.	
			8. Rice.	
			9. Sugar-cane.	
			10. Potatoes.	{ Sweet.
				{ Irish.
			1. Farming Implements.	
			2. Cotton Goods.	
			3. Woolen Goods.	
			4. Malt and distilled Liquors.	
			5. Iron ware of all sorts.	
			6. Machinery.	
5. Government. Federal Republic.				
6. Divisions.	{	1. The Northeastern, or New England States.		
		2. The Middle States.		
		3. The Southern States.		
		4. The Central States.	{ 1. Eastern Division.	
			{ 2. Western Division.	
		5. The Western States.		
		6. The Territories.		
	{ 7. The District of Columbia.			

CHAPTER III.

THE UNITED STATES.

REVIEW,—The boundaries of the U. S. have already been named, but it will be advisable to review the work. More or less reviewing should be done every day, instead of putting it off until the last two or three weeks of the term, as some do.

Importance of Contour and Relief.—The relief of the country should next be studied. Considerable has already been said about the importance of the study of contour and relief, but none too much. When the children are older and have advanced far enough in their work to warrant it, they can easily be led to see the influence exerted by the contour of a country upon its civilization and progress. It is not wise however, to advance this thought yet; but you should bear it in mind. *You must see the end from the beginning, if you would do intelligent work.* And right here is one of the weak places with many teachers; they frequently see neither end nor beginning. Their vision is limited to the lesson of the hour, and many do not even know that as well as they expect their pupils to recite it.

But while it is not wise at present to refer to the contour of a country as a factor in its civilization, it is perfectly safe to show the children the importance of relief. They should have the fact thoroughly impressed upon their minds that on the surface of a country depend, in a large measure, its climate, soil, crops, and the principal industrial pursuits of the people; the dependence should be made clear.

Climate.—The climate of the United States is temperate, but is much warmer in the southern part than in the northern.

PRODUCTIONS.—The principal crops in the south are cotton, rice, sugar-cane, tobacco, corn, sweet-potatoes, etc.; in the central and northern parts corn, wheat, oats, barley, rye, tobacco, Irish potatoes, etc., are the leading productions. Did you ever see any Irish potatoes? Why so called? The portion of the country occupied by the Pacific Highlands is valuable mainly for its minerals, of which gold and silver are the principal ones. The Mississippi Basin and the Atlantic Highlands are rich in coal and iron, which are mined in large quantities. Copper, lead, and petroleum are also found in several places.

MANUFACTURES.—Manufactures are carried on to some extent in nearly all parts of the country, but most extensively in the northeast. They consist mainly of farming implements, cotton goods, woolen goods, malt and distilled liquors, iron ware of all sorts, machinery, etc.

Let the pupils point out on the map the parts of the country which produce much cotton, tobacco, rice, wheat, corn, gold, silver, coal, iron, copper, lead, etc. If they have molded a map of the country, the interest in the recitation may be enhanced by placing the different grains, minerals, etc., on the parts of the country in which they are produced.

GOVERNMENT.—The United States, at present consists of thirty-eight States, ten Territories, and one Federal District. The people of the different States choose men to represent them in making the laws for the whole country. These men meet at Washington City, in the District of Columbia. The city is the *capital* of the nation, and the building in which the law-makers meet is the *capitol*. They assemble in two different rooms for the transaction of business. Those in one room are called Senators; and those in the other, Representatives. The Senate and House of Representatives constitute the Congress. The States also elect an officer who is to

see that the laws are obeyed; he is styled the President of the United States. They have, in addition, several Judges who explain the laws, and set aside any that may be in violation of the Constitution, which is the great law of the nation. These Judges constitute the Supreme Court. Because the people determine who shall make the laws, and who shall execute them, our government is a Republic.

The people of each State elect men who meet at its capital and make its laws. They also elect its Governor, who enforces the laws, and Judges, who explain them; hence each State is a Republic.

This, in all probability, is all that it is worth while to teach at present about forms of government. As the work progresses, thoughts will arise in the minds of the pupils that will prompt them to ask questions on this and kindred subjects. To answer these questions so as to impart the desired information in plain, simple language, is your work. It is most earnestly hoped that you will not assign long paragraphs about Kings, Queens, Czars, and Sultans, nor ask the children to learn dissertations on Absolute and Limited Monarchies; and for no better reason than that they occur in the front part of the book.

Divisions of the Country.—Geography-makers generally begin the study of the States by separating them into groups. This grouping is not uniform even among the best geographers; it is largely a matter of taste. The following plan is believed to be as good as any, and better than some.

I. The Northeastern, or New England States.

II. The Middle States, which extend south to the line of the "Missouri Compromise," and west to Ohio.

III. The Southern States, which include all south of that line and east of the Rocky Mountains.

IV. The Central States (Eastern Division), which include all north of the same line, and extend west from the Middle States to the Mississippi River.

V. The Central States (Western Division), which are also bounded on the south by the line of the "Missouri Compromise," east by the Mississippi, north by British America, and west by the Rocky Mountains.

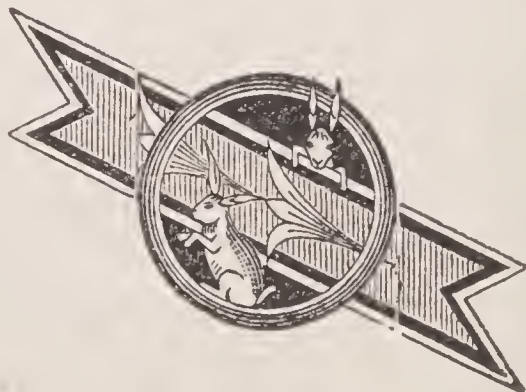
VI. The Western States.

VII. The Territories.

VIII. The District of Columbia.

Again, there is a diversity of opinion as to which group to study first. Some begin with the home group and work outwards; others prefer beginning with the New England States. The latter plan is the most convenient, and will best enable the pupils to study the *natural geography* of the different groups, and also of the country as a whole. Whichever method is followed, the position and group of the home State should be noticed before proceeding farther.

If this arrangement does not suit you, and you think of something better, use your freedom. Do not depend too much on any book; as even the best can only suggest. You must think for yourself and then decide as to plans.



SCHEME OF CHAPTER IV.

New England States.	1. General Description.	1. States.	1. Maine.		
			2. New Hampshire.		
			3. Vermont.		
			4. Massachusetts.		
			5. Rhode Island.		
			6. Connecticut.		
		2. Surface.	1. White Mts.	1. Mt. Washington.	
			2. Green Mts.	2. Katahdin.	
		3. Industries.	1. Manufactures.	1. Mt. Mansfield.	
			2. Agriculture.	2. Hoosac.	
		2. Rivers.	1. St. Croix.	4. Merrimac.	
			2. Penobscot.	5. Connecticut.	
			3. Kennebec.		
			1. Chesuncook.		
		3. Lakes.	2. Champlain.		
			1. Penobscot.	4. Cape Cod.	
		4. Bays.	2. Casco.	5. Narragansett.	
			3. Massachusetts.		
		5. Capes.	Cape Cod.		
6. Islands.		1. Mt. Desert.			
		2. Martha's Vineyard.			
		3. Rhode Island.			
7. Cities.		1. Bangor.	10. BOSTON.	19. Holyoke.	
		2. Bath.	11. Plymouth.	20. New Haven.	
		3. AUGUSTA.	12. New Bedford.	21. Bridgeport.	
		4. Portland.	13. Fall River.	22. Waterbury.	
		5. Portsmouth.	14. NEWPORT.	23. MONTPELIER.	
		6. Lowell.	15. PROVIDENCE.	24. Burlington.	
		7. Manchester.	16. Worcester.	25. Rutland.	
	8. CONCORD.	17. HARTFORD.			
	9. Salem.	18. Springfield.			

CHAPTER IV.

NEW ENGLAND.

Maine,	Massachusetts,
New Hampshire,	Rhode Island,
Vermont	Connecticut.

General Description.—New England consists of six States, one of which, Rhode Island, is the smallest in the Union. Maine is the largest State in this group, and is about as large as the other five. The entire group does not equal in area some of the Western States.

The surface of New England is very rough. The White Mountains pass southwest and northeast through New Hampshire and Maine. Mt. Washington, the highest point, is situated in New Hampshire; it is frequently called "The Crown of New England," being the highest point in this group of States. Thousands of people ascend it every summer to behold the magnificent view that may be had from its summit. In Maine, the mountains are much lower, Mt. Katahdin being the highest point.

The Green Mountains extend north and south through Massachusetts and Vermont. In the former State they are known by the name of Hoosac Mountains, and have passing through them the longest railroad tunnel in the United States; it is about five miles in length and situated in the northwestern part of the State. Near the center of Vermont, the Green Mountains separate into two ranges, presenting the form of a Y, with the opening to the north. Mt. Mansfield, the highest point, is in the western range.

Industries.—Owing to the character of its surface, New England is poorly fitted for farming. Yet, in some parts, the industry and perseverance of the people overcome the *sterility* of the soil, and their labor is rewarded with fair crops of wheat, oats, rye, barley, potatoes, and corn. Tobacco is raised in Connecticut and Massachusetts, and Vermont is extensively engaged in wool-growing. New Hampshire produces about wheat enough each year to keep its inhabitants in bread three weeks. From where do the people get bread? How pay for it?

The mountains that render New England unfit for agriculture give it great manufacturing facilities, by causing falls and rapids in the rivers. The water-power thus furnished by nature is used in manufacturing cotton and woolen goods, boots and shoes, clocks, hardware, machinery, paper, etc.

The *commerce* of New England is very extensive. The leading exports are lumber from Maine, granite from Massachusetts and New Hampshire, marble from Vermont, and manufactured articles from the different States. The imports are cotton, wool, coal, iron, hides, and the various articles of food.

Many of the people are engaged in fishing.

Suggestions.—In the lessons which follow, you will observe that the places studied are not, at first, arranged according to States. It is believed that in the assignment and learning of the lesson, it is best to follow the coast-line and rivers as far as may be. This is what may be termed the natural plan of studying geography, and leads to a more comprehensive view of the work than can be gained by strictly following State limitations. In sketching, care must be taken to draw the State lines where they belong, and of the proper shape. So that the pupils must not only study the places with reference to their State, but also in their relations to other States.

You will find it profitable to take a few minutes of the recitation hour each day in assigning the lesson for the day following. Do not let the shortness of the recitation period keep you from doing this, and lead you, instead, to write a list of names on the blackboard for the children to copy. The plan here commended will enable you to save time by diminishing the number of classes. Two classes in geography are all that are necessary in any school, one in Elementary work, the other in Advanced work. Uniformity of text-books is not essential to the well-being or happiness of either, unless the teacher is too shiftless to learn his lesson; and if he is, uniformity of text-books will avail but little. The teacher is more than the book—or should be.

Let each member of the class have his book open at the proper page, and find each place on the map as you mention its name. It is hoped that you have pride enough to *compel* you to know the lesson before assigning it to your pupils. Do not be under the necessity of referring to the book, or of reading the names from your note book, which is worse. If you assign a place that does not happen to be shown on some of the maps in use, be ready to step to the blackboard and, with the chalk, show the position of the place with reference to some place that can be found.

Do not excuse yourself from doing this work by saying you have no talent for drawing, no “knack” in sketching. *It is not so much a question of talent as it is of willingness to work.* If you practice intelligently and industriously, you will soon learn to sketch creditably. Others have done so, why not you?

Remember that this work is elementary, and you are to study but few places. But these are to be selected because of their importance, and not at hap-hazard from the map. It is believed that the following places will be sufficient at present.

Maine.—

St. Croix River—Boundary. *Mt. Desert Island*, a popular summer resort.

Penobscot Bay. Penobscot River, navigable for large vessels to Bangor. *Bangor*, the center of a rich farming country, and of the lumber traffic for New England.

Chesuncook Lake. Mt. Katahdin, the highest land in Maine. *Kennebec River. Bath*, noted for ship building. *Augusta*, the capital of the State.

Casco Bay. Portland, the principal sea port of Maine, and its largest city.

When these places are learned, have the pupils pass to the blackboard and sketch the State. Let them use their rulers in getting the proportions, but do not permit them to put on any complicated system of triangles or squares. They will at first be inclined to do so, as they find suggestions to that effect in their text-books. Forbid it, and insist that the work be free-hand drawing. You will need to assist them occasionally by giving timely suggestions as to the length of the State, its width at different points, or the shape of an end or side, but as far as possible let the children observe these things themselves.

When the sketch is completed, with mountains, rivers, lakes, bays, islands, cities, etc. neatly shown, let the pupils name the adjoining States; this is an easy way of learning boundaries.

Portsmouth, the principal sea port of New Hampshire.

Merrimac River turns the most spindles of any river in the world. What is a spindle?

Lowell is the second largest city in Massachusetts, and manufactures the most cotton goods of any city in the United States.

Manchester, the largest city in New Hampshire, is largely engaged in the manufacture of cotton goods, and other articles.

Concord, the capital of New Hampshire.

The Merrimac River rises among the White Mountains. Going south from its mouth we come to *Salem*, noted in the past for witchcraft.

Boston,* the capital of Massachusetts, and the largest city in New England. It is extensively engaged in commerce, and has in it many places of interest; among which are Boston Common and Bunker Hill Monument. Harvard University is near by.

Plymouth, noted for the landing of the Pilgrim Fathers.

Cape Cod Bay.

Cape Cod. Can you hold your arm so it will resemble this strip of land? On which side is the bay? Where is the cape?

Sketch the Merrimac River, and the coast from Maine to Cape Cod.

Martha's Vineyard, a popular summer resort.

Narragansett Bay cuts the State of Rhode Island into two unequal parts? On which side is the larger part?

Rhode Island, a beautiful island in Narragansett Bay.

Newport, one of the capitals of the State of Rhode Island and a very popular summer resort, is situated on the island of Rhode Island.

Fall River, a city of Massachusetts, extensively engaged in the manufacture of cotton goods, nails, machinery, etc.

Providence, one of the capitals of Rhode Island, is largely engaged in manufactures; it is the seat of Brown University.

Worcester has over twenty manufactories of boots and shoes, besides manufactories of many other articles.

Connecticut River, the largest river in New England.

Ascending the Connecticut River we come to

Hartford, noted for its insurance companies.

Springfield, noted for the United States arsenal situated there. What is an arsenal?

*See sketch of Boston, Part III.

Holyoke, noted for several kinds of manufactures, especially paper.

Sketch the Connecticut River, showing all boundaries that cross it. Sketch Rhode Island.

Sailing west from the mouth of the Connecticut River, we come to

New Haven, the most populous city of the State, and the seat of Yale College. Why is it sometimes called "The City of Elms"?

Bridgeport, extensively engaged in the manufacture of carriages, sewing-machines, ammunition, etc.

Waterbury, noted for its rolling-mills, button-factories, clock-factories, etc.

Lake Champlain, a long, narrow body of water situated between the States of New York and Vermont. The outlet is at the north end, and flows into the St. Lawrence River.

Winooski River flows into Lake Champlain from the east. On it is

Montpelier, the capital of Vermont.

Burlington, the most populous city of Vermont, is situated on Lake Champlain, a short distance from the mouth of the Winooski River.

Rutland, noted for its marble quarries.

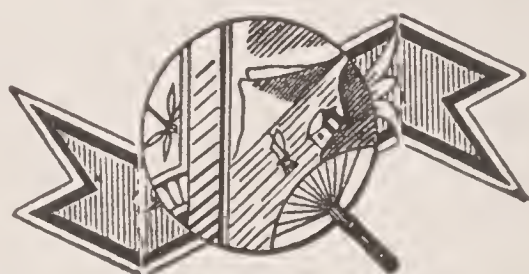
Sketch Connecticut. Notice that the Connecticut River crosses the northern boundary of the State a trifle east of the middle, and that the southern border of the State, excepting the narrow strip at the southwest corner, is divided into three nearly equal parts by the Connecticut River and New Haven Bay.

Sketch Connecticut, Rhode Island, and Massachusetts. Observe that the east end of Connecticut equals in width the State of Massachusetts, opposite that point, and that the north-

ern boundary of Connecticut equals the distance from the northeast corner of the State to the east side of Cape Cod Bay.

Sketch Vermont and New Hampshire. The north end of Vermont is about four times as wide as New Hampshire on the same parallel, and equal to the northern boundary of Connecticut; it is also midway between the equator and the north pole.

These measurements will suggest others to the teacher and, it is hoped, to the pupils also. The care which they must exercise in testing the accuracy of these will probably lead to discoveries equally valuable. Let them be encouraged to observe closely and accurately.



CHAPTER V.

THE MIDDLE STATES.

Note:—You can make schemes for this and the following chapters, from the models already given.

New York,	Delaware,
New Jersey,	Maryland,
Pennsylvania,	Virginia,
West Virginia.	

This group of seven States lies between New England and the Ohio River, and between the Great Lakes and the Atlantic. The group is traversed from northeast to southwest by the ranges of the Appalachian Mountains, which influence the surface of each of the States, except Delaware.

The coal and iron stored up in these mountains constitute a great share of the wealth of the States.

This is especially true of Pennsylvania, whose anthracite coal-fields, situated between the Delaware and Susquehanna Rivers, are the most valuable in the country, and probably in the world.

Their great abundance of fuel makes it possible and profitable for these States to enter largely into manufactures of various kinds. The principal branch carried on is the production of iron and steel wares of all sorts, in which industry this group of States leads all others.

Agriculture is the leading industry in each of the States, and forms the sure foundation on which its prosperity rests. Wheat, rye, barley, oats, Indian corn, and the common vegetables and fruits are profitably cultivated in all, while tobacco,

forms one of the staple crops of Delaware, Maryland, Virginia, and West Virginia.

New York City,* the largest city of the United States, is situated on New York Bay at the mouth of the Hudson River. It has the most commerce of any city in the country, and is largely engaged in manufacturing.

Brooklyn, the third city of the United States in size, is situated on the west end of Long Island, and separated from the city of New York by the East River.

Jersey City, the largest city of New Jersey, is situated on the west bank of the Hudson River, opposite the city of New York.

Ascending the Hudson River, we come to

West Point, the seat of the United States Military Academy, at which are educated officers for the United States Army.

Poughkeepsie is noted for its schools, especially Vassar College, for ladies.

Albany, the capital of the State of New York, is on the Hudson.

Troy is noted for the manufacture of stoves, shirts and collars.

The Mohawk River.

Saratoga Springs, a famous watering-place, is north of the Mohawk, and a few miles west of the Hudson.

The Hudson River rises among the Adirondack Mountains, in the northeastern part of New York.

In sketching the Hudson, let the pupils note the two great bends between its source and the mouth of the Mohawk.

North of the State of New York are the St. Lawrence River and Lake Ontario.

Oswego is situated on Lake Ontario.

Rochester is noted for its flouring mills, fruit nurseries, and the manufacture of boots and shoes.

*See sketch of New York, Part III.

Niagara River flows from Lake Erie into Lake Ontario.

In it are the famous Falls of Niagara, 165 feet high.

Buffalo, noted for its commerce.

Sketch the State of New York, showing all the places learned in the State, including Lake George and the west shore of Lake Champlain.

Newark is an important city of New Jersey.

Long Branch is an important watering-place on the coast of New Jersey.

Cape May, the southern point of New Jersey.

Cape Henlopen. Delaware Bay.

The State of Delaware is especially noted for its peaches. Notice the shape of the State, and compare its size with that of Rhode Island.

Dover, the capital of Delaware, is situated on Jones Creek.

Wilmington, the largest city of Delaware, is an important manufacturing city.

Delaware River.

Philadelphia, the largest city of Pennsylvania, is noted for its commerce and manufactures.

Trenton, the capital of New Jersey.

The Delaware River separates what States? Sketch the river.

Sketch the State of New Jersey as a whole.

Cape Charles is on the north side of the entrance into Chesapeake Bay.

Cape Henry is on the south side of the entrance into the Chesapeake.

Observe that both Capes Charles and Henry are in Virginia, and that on the peninsula between the Delaware and Chesapeake Bays are situated the State of Delaware and parts of Maryland and Virginia. There are no large cities in that part of Maryland lying east of the Chesapeake Bay.

The Susquehanna River.

Harrisburg, the capital of Pennsylvania.

Wilkesbarre is an important coal-mining and manufacturing center. Its principal manufactures are locomotives, mining engines, railroad cars, miners' tools and pottery.

Notice where the Susquehanna enters Pennsylvania, and the two great bends which it makes before entering the bay.

Pittsburg, the second city of Pennsylvania in population, is situated at the head of the Ohio River. It is the greatest iron manufacturing city on the Western Hemisphere.

Erie is situated on Lake Erie.

Sketch the State of Pennsylvania showing its rivers and towns. Be careful to get the proportions right.

Draw the States of New York, New Jersey, and Pennsylvania in one sketch.

Baltimore, the most populous city of Maryland, is situated on the Patapsco River, fourteen miles from its entrance into the Chesapeake Bay. It is a very important commercial and manufacturing city. The canning of oysters, fruits, and vegetables is carried on extensively. Baltimore is often called the "Monumental City." Why?

Annapolis, the capital of Maryland.

The Potomac River rises in the northern part of West Virginia, flows southeast, and enters the Chesapeake Bay midway between Baltimore and the capes. What States are separated by the Potomac?

Washington, the capital of the United States, is situated on the east bank of the Potomac, in the District of Columbia. The most interesting buildings in the city are the Capitol, in which Congress meets to make laws for the nation, the White House, which is the residence of the President, and the Patent Office in which are kept models of all machines invented in the country. The

Washington monument, 555 feet in height, is the highest structure ever built by man.

In sketching Maryland be careful about the shape and width of the western part of the State.

The James River.

Fortress Monroe is situated at the mouth of the James.

Norfolk is the principal seaport of Virginia.

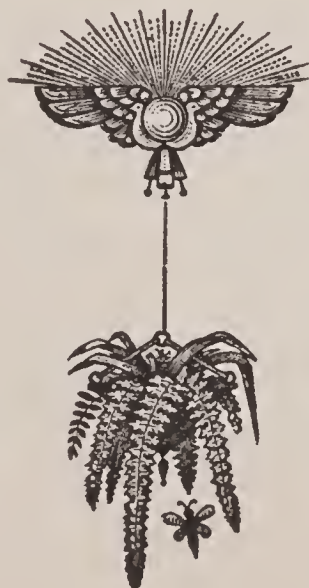
Richmond, the Capital of Virginia, was the capital of the Southern Confederacy.

Lynchburg is on the James.

Wheeling, the capital of West Virginia, is on the east bank of the Ohio River. Notice the width of the State at this point.

Charleston, an important city of West Virginia.

Sketch Virginia and West Virginia, and make scheme of this chapter, similar to the scheme of New England.



CHAPTER VI.

THE SOUTHERN STATES.

North Carolina,	Mississippi,
South Carolina,	Louisiana,
Georgia,	Texas,
Florida,	Arkansas,
Alabama,	Tennessee.

This group of States may be regarded as bounded on the north by parallel $36^{\circ} 30'$, the Missouri Compromise line.

The Appalachian Mountains continue southwest into Mississippi, and influence the surface of each of the States east of the Mississippi, excepting Florida; and the surface of States west of the Mississippi, with the exception of Louisiana, is broken by the Ozark Mts. The southern half of each of the Atlantic and Gulf States is low and level.

The climate in the northern part of the group is temperate, while in the southern part it is sub-tropical.

The crops in the north are about the same as those of the Middle States, but in the south cotton, rice and sugar-cane are the chief productions. This is the greatest cotton-producing region of the world.

Mississippi produces the most cotton of any of the States; Louisiana, the most sugar-cane; and South Carolina, the most rice. North Carolina is noted for its tar, turpentine, and tobacco.

Manufacturing is not carried on so extensively as in the New England and Middle States, but it is now receiving much at-

tention, and great progress has been made in this direction in the last ten years.

The Appalachian Mts. are rich in coal and iron, which are being profitably mined in several of the States.

Cape Hatteras, the eastern point of North Carolina.

Raleigh, the capital of North Carolina, is an important railroad center.

Wilmington is the largest city of North Carolina, and its principal sea port.

Black Dome, the highest mountain east of the Mississippi, is in the western prrt of North Carolina. Height, 6,706 ft.

Columbia, the capital of South Carolina.

Charleston, the most populous city of South Carolina, is the leading commercial city of the Carolinas. Fort Sumter guards the entrance into the Harbor.

Savannah, an important river, which separates South Carolina from Georgia.

In sketching the Carolinas, observe that North Carolina extends much farther west than South Carolina.

Savannah, the principal sea port of Georgia.

Atlanta, the capital and largest city of Georgia, is an important railroad center, and is extensively engaged in manufacturing.

Saint John's, the principal river of Florida, flows through the great orange-producing region of the State.

St. Augustine, the oldest city of the United States, is situated on the Atlantic coast.

Cape Sable, the southern point of Florida.

Key West, on an island southwest of Cape Sable, is the most populous city of Florida. It has important sponge-fisheries, and extensive manufactures of cigars.

Gulf of Mexico. Tallahassee, the capital of Florida.

Mobile Bay, an arm of the Gulf of Mexico.

Mobile, the largest city and only sea port of Alabama.

Mobile River is formed by the junction of the Tombigbee and Alabama Rivers.

Montgomery, the capital of Alabama, and the second city of the State in size and commercial importance.

When sketching Georgia, Alabama, and Florida, call the attention of the pupils to the northern boundary of Florida. Observe that Alabama is bounded on the south for three-fourths of the distance by Florida, and that Georgia is bounded on the north for half of its width by North Carolina.

Jackson, the capital of Mississippi.

Vicksburg, an important commercial city; also noted for its part in the Civil War.

Mississippi, the most important river of the United States, enters the Gulf of Mexico by several mouths. It is navigable almost throughout its entire course.

New Orleans, the largest city in this group of States, is situated on the left bank of the Mississippi, a hundred miles from the Gulf. It is a very important commercial city; from 1,000 to 1,500 vessels of various kinds may frequently be seen at its levee, loading and unloading.

Baton Rouge, on the east bank of the Mississippi River, is the capital of Louisiana.

Shreveport is a flourishing town, on the Red River.

Sketch Louisiana and Mississippi, and when doing so, notice that the Red River flows into the Mississippi River opposite a boundary line.

Sabine River separates Louisiana from Texas.

Galveston, the largest city and principal seaport of Texas, is situated on Galveston Island at the entrance to Galveston Bay.

Austin, the capital of Texas, is quite a railroad center, and has considerable commerce.

Rio Grande River separates Texas from the Republic of Mexico.

Texas is the largest State of the Union. It is about four and a half times as large as Illinois, and two hundred and twelve times as large as Rhode Island, but its population at this writing is only about half as great as that of Illinois.

Arkansas River.

Little Rock, on the south bank of the Arkansas River, is the capital and largest city of Arkansas.

Helena, on the Mississippi, has considerable commerce.

Memphis, an important commercial city.

Nashville, the capital and largest city of Tennessee, is a handsome city, and has a large commerce, being the center of an extensive railroad system.

In sketching Tennessee, the Cumberland and Tennessee Rivers should be shown. The break in the northern boundary should be pointed out, and all boundaries which touch the State should be marked on the sketch for a short distance.



CHAPTER VII.

EASTERN DIVISION OF THE CENTRAL STATES.

Kentucky,	Illinois,
Ohio,	Wisconsin,
Indiana,	Michigan.

This Division is bounded on the north by the Great Lakes, on the east by Pennsylvania and the Ohio and Sandy Rivers, on the south by the Southern States, and on the west mostly by the Mississippi River.

The surface, in the main, is level, although the eastern half of Kentucky and southern half of Ohio are hilly and broken.

The climate is on the whole temperate, but variable.

The leading productions are Indian corn, wheat, oats, rye, barley, Irish potatoes, and the common vegetables and fruits.

Kentucky produces much tobacco; Ohio, wheat and wool; and Illinois, the most corn of any State in the Union. Michigan and Wisconsin have extensive pine forests, from which large quantities of lumber are made annually; and the former has, also, valuable mines of copper and iron. The greater part of Illinois is under-laid by rich deposits of coal, which is of great value in advancing the manufacturing interests of the State.

All of the States are extensively engaged in manufacturing—farming implements of various descriptions being the chief productions. Illinois manufactures the most whisky of any State in the Union.

Ohio River.

Louisville, the largest city of Kentucky, is actively engaged in commerce, and has extensive manufacturing establishments.

Frankfort, the capital of Kentucky, is situated on the Kentucky River, in the famous blue-grass region.

Sandy River forms the boundary between Kentucky and West Virginia.

Cincinnati, the largest city in the basin of the Ohio, is an important commercial and manufacturing city, and is especially noted for the great quantity of pork it packs annually.

Columbus, the capital of Ohio, is a commercial and manufacturing center.

Cleveland, is the largest city of northern Ohio; its lake commerce is very important.

Toledo is situated on the Maumee River, a short distance from Lake Erie. It is noted for its commerce and manufactures.

Detroit, the largest city of Michigan, is one of the leading commercial cities of the lakes; its manufactures, also, are important.

Lake Huron. Straits of Mackinaw.

Lake Michigan separates Wisconsin from a part of Michigan.

Lansing, the capital of Michigan.

Fort Wayne, an important railroad town of Indiana.

Wabash River rises in Ohio, flows southwest through Indiana until it reaches the boundary between that State and Illinois, which line it follows for the rest of its course to the Ohio.

La Fayette, a railroad and manufacturing town.

Terre Haute is also a railroad and manufacturing town.

Indianapolis, the capital and largest city of Indiana, is the center of one of the great railroad systems of the nation, which fact accounts for its very extensive commerce. Its manufactures are many and valuable, and pork-packing is one of its chief industries.

Shawneetown is in the southern part of Illinois.

Cairo, the most southern city of Illinois, is situated at the junction of the Ohio and Mississippi Rivers, which position gives it great commercial advantages.

Let the pupils sketch the Ohio River, showing its principal tributaries, cities, and *all* boundaries that touch its banks.

East St. Louis is in the southwestern part of Illinois, on the Mississippi River. It is opposite St. Louis with which it is connected by one of the finest bridges in the country. At East St. Louis are located the largest stock yards in the Union.

Illinois River is the principal river of Illinois.

Springfield, the capital of Illinois, is situated four miles south of the Sangamon, one of the branches of the Illinois. Lincoln's Monument, which is located here, and the Capitol are the principal objects of interest in the city.

Decatur is an important railroad center and manufacturing town.

Bloomington is surrounded by a rich farming country, to which it owes its prosperity.

Peoria, the second city of Illinois in size and commercial importance, is also an important railroad center, and is very extensively engaged in manufacturing.

Aurora, an important railroad town.

Elgin is noted for its watch factory and Insane Asylum.

Kankakee also, has an Insane Asylum.

Joliet is an enterprising and prosperous city on the Des Plaines River; it is noted for its stone quarries and the State Penitentiary.

Chicago, the largest city of Illinois, is situated in the north-eastern part of the State on Lake Michigan, at the mouth of the Chicago River. The river and its branches divide the city into three parts, the North, South, and West Sides.

Chicago is the fourth city of the Union in population, the third in manufactures and the second in commerce. More important lines of railroad center here than in any other city on the continent. It is the greatest grain market in the world, and the most important market in the United States for live-stock and lumber, and it packs the most pork of any city in the world.

The great fire of 1871 destroyed a large part of the city. Population in 1880,* 503,185, but it is much more now as its growth is rapid.

Quincy, the third city of Illinois in population.

Rock Island is a short distance above the mouth of the Rock River, on the Mississippi. The United States Arsenal is situated on an island in the river opposite the city.

Rock River has a great number of manufacturing towns along its banks.

Rockford, engaged in manufacturing farming implements, is on Rock River

Galena, noted for its lead mines, is in the northwestern part of Illinois, a short distance from the Mississippi.

Sketch Illinois.

La Crosse and Eau Claire (O Clare) manufacture great quantities of lumber annually.

Lake Superior, the largest body of fresh water in the world.
Green Bay.

Oshkosh is the center of an important lumber trade.

Milwaukee, the "Cream City," situated on the west shore of Lake Michigan, at the mouth of the Milwaukee River, is the largest city of Wisconsin. The city is extensively engaged in trading and manufacturing. It is especially noted for its beer and brick.

Madison, situated on some beautiful lakes in the southern part of the State, is the capital of Wisconsin.

*For a fuller description of Chicago, see Part III,

CHAPTER VIII.

WESTERN DIVISION OF THE CENTRAL STATES.

Missouri,	Nebraska,
Iowa,	Kansas,
Minnesota,	Colorado.

This group of States is very irregular in outline; hence, it is difficult to bound. On the east it is separated from the Eastern Division of the Central States by the Mississippi River, on the south it is bounded by Arkansas and the Territories, on the west by the Territories, and on the north by the Territories and British America.

The surface of four of these States is level. That of Missouri is broken and hilly, especially in the south; and that of Colorado is very rough, nearly the whole State being covered with mountains.

The climate and crops are about the same as those of the States studied in the last chapter, with the exception of Colorado, in which the winters are very severe, and the summers cool and bracing.

Missouri has rich deposits of coal, iron, lead, and zinc. Iowa and Kansas are well supplied with coal; and the silver mines of Colorado are famous throughout the world. Manufacturing is carried on to some extent, but not on so large a scale as in the States east of the Mississippi.

St. Louis, the most populous city in the basin of the Mississippi, is situated on the right bank of that river, twenty miles south of the mouth of the Missouri River. It is connected with the Illinois side of the river by the finest bridge that crosses the Mississippi, over which pass the

scores of railroad trains that enter the city daily from the east. The city has a very extensive river commerce, and is a great manufacturing center.

Missouri River rises among the Rocky Mountains.

Jefferson City, the capital of Missouri, is near the center of the State.

Kansas City, the "Gate City of the Southwest" is the second city of the State, both in population and commerce.

Hannibal is a railroad and manufacturing town.

Des Moines River, for a part of its course, forms the boundary between Iowa and Missouri.

Des Moines, the capital of Iowa.

Council Bluffs is the largest city of Western Iowa.

Burlington, a prosperous city of Iowa, manufactures farming implements, flour, machinery and railroad cars.

Davenport, one of the leading cities of Iowa, is opposite Rock Island, with which it is connected by a grand, wrought iron bridge. It carries on considerable trade, and is quite a manufacturing city.

Dubuque, the principal business center of the lead region of the Northwest, is situated opposite the northern end of Illinois.

St. Paul, the capital of Minnesota, is at the head of navigation; its commerce is great.

Minneapolis, the largest city of Minnesota, is on the Mississippi R., a little below the Falls of St. Anthony. It manufactures the most flour of any city in the world.

Let the pupils sketch the Mississippi from its source to Cairo, showing its principal bends, tributaries and cities. Have the pupils indicate all boundaries that touch the river. *This is important.*

Duluth, at the west end of Lake Superior, is the eastern terminus of the Northern Pacific Railroad; its commerce is considerable.

Omaha, the largest city of Nebraska, is a great railroad center, and has some trade and manufactures.

Platte River rises in Colorado.

Lincoln, the capital of Nebraska.

Leavenworth is the largest city of Kansas.

Kansas River. Topeka, the capital of Kansas.

Denver, the capital and largest city of Colorado, is on the South Fork of the Platte R. This is the center of a very rich silver-mining region.

Leadville, noted for its silver mines, is on the head waters of the Arkansas River.

Sketch the Missouri, being sure to have the boundaries properly placed.



CHAPTER IX.

WESTERN STATES AND TERRITORIES.

States.	{	Nevada.
		California.
		Oregon.

The surface of Nevada is very rough, there being but little level land in the State. Owing to this fact, and, also, to the slight rain-fall, agriculture is not carried on so extensively as in the other States.

The chief wealth of the State consists in its rich mines of gold and silver.

Carson City, the capital of Nevada, is situated in the western part of the State. It has a United States mint, and several mills for extracting gold and silver. Explain briefly what these mills are and what they do.

California is the second State of the Union in size. It is bounded on the west by the Pacific Ocean throughout its whole length, and on the southeast by Arizona, separated by the Colorado River.

The surface consists of two systems of mountains, the Coast Range and Sierra Nevada, and the long, double valley between them. The San Joaquin River flows north through the southern part of this double valley, and the Sacramento River flows south through the northern part. Both rivers flow into the Bay of San Francisco, an arm of the Pacific.

California is one of the leading wheat and wool-producing States of the Union. Wherever the land can be irrigated it yields large crops; and sheep and cattle do well on the lower

foot hills. The southern part of the State is famous for its oranges and grapes.

The gold mines of California have added much to its wealth, and mining is still carried on profitably in many parts of the State.

Sacramento City, the capital of California, is an important commercial city.

San Francisco is the principal city of California, both in population and commerce. Its commerce is growing very rapidly, and its manufactures of silk goods, cigars, boots and shoes, carriages, and glass are very valuable.

The surface of Oregon is rough and broken, as the Cascade Mountains extend north and south through the State. There is, however, much good farming land in the State; and its mild climate and great forests are attracting to it a large number of industrious farmers from the older States.

Salem, on the east bank of the Willamette River, is the capital of Oregon.

Portland, the largest city of Oregon, is on the west bank of the Willamette River. It is the chief commercial city of the State, and exports wheat, flour, oats, wool and lumber.

Sketch California and Oregon.

Territories.	{	Dakota,	Utah,
		Montana,	Indian Territory,
		Idaho,	New Mexico,
		Washington,	Arizona,
		Wyoming,	Alaska.

Nearly all of the Territories are situated among the Rocky Mountains, consequently their surface is very rough and broken. With the exception of Dakota, and possibly Washington, they are not well fitted for agriculture. Many of them

have rich mines of gold and silver, and all except Alaska, support large herds of cattle. They are destined to be the great beef-producing region of the country.

Dakota joins Minnesota on the west. It is being rapidly settled, and is noted for its great wheat fields. It has rich gold mines in the southwest, among the Black Hills.

Bismarck, the capital of Dakota, is situated on the Missouri River.

Montana is next west of Dakota. It is noted for its gold and silver mines and for its cattle.

Helena, the capital of Montana, is fourteen miles west of the Missouri River.

Idaho is also famous for its mines of gold and silver, and cattle.

Boise City, the capital, is in the southwestern part of the Territory.

Washington Territory is situated in the northwestern corner of the United States. Much of its area is well suited for agriculture, and the rest is adapted to grazing. It is separated from Oregon, nearly throughout, by the Columbia River.

Olympia, in the western part of the Territory, on Puget's Sound, is the capital.

Wyoming is mainly devoted to grazing, although there is some farming carried on in this as well as in all of the other Territories.

Cheyenne, the capital, is situated in the southeastern part.

Utah is one of the most prosperous of the Territories. Farming is carried on with great skill and perseverance. The mining interests of the Territory are important.

Salt Lake City, the capital of Utah, is situated near the Jordan River, about twelve miles from the Great Salt Lake. It is a beautiful and prosperous city.

Indian Territory is set apart by the Government of the United States for the use of the Indians. No white man is allowed to own land in the territory, unless he is married to an

Indian woman. Many of the tribes have become quite civilized. The Territory can hardly be said to have a capital. Tahlequah, in the northeastern part of the Territory, is, probably, the principal city.

New Mexico has a warm climate, and wherever the valleys can be irrigated, abundant crops can be raised. Grazing and mining are the principal industries. Many of the people speak the Spanish language.

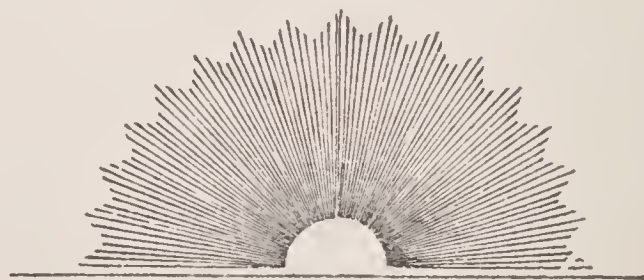
Santa Fe, the capital of New Mexico, is about twenty miles east of the Rio Grande River.

Arizona lies west of New Mexico, and is bounded on the west by California and Nevada. It is mainly a barren, sandy region, owing to the insufficiency of rain. It has rich silver mines.

Prescott, the capital, is situated nearly in the center of Arizona.

Alaska is not connected with the rest of the United States. It is situated in the northwestern corner of North America. There are but few white people in the Territory. The climate is too cold for agriculture; but the Territory is valuable on account of its fisheries and furs.

Sitka, the capital of Alaska, is on an island off the west coast.



CHAPTER X.

SOUTH AMERICA.

South America, the smaller of the American continents, is situated southeast of North America, with which it is connected by the Isthmus of Panama.

It is triangular in form, wide at the north, and tapering towards the south. Its longest side is on the west, and the shortest on the north. The coast line is very regular, there being but comparatively few indentations.

The surface resembles that of North America. The Andes Mountains, which may be regarded as a continuation of the Rocky Mountains, extend along the Pacific coast from the Isthmus to Cape Horn, the southern extremity of the continent. They are much closer to the coast than are the "Rockies," reach a greater elevation, and contain many volcanoes. Nevado de Sorata (25,000 feet above sea level), in Bolivia, is the highest land in the New World. Between the ranges of these mountains are several extensive plateaus, and deep valleys.

The Brazilian Mountains, next in importance to the Andes, are situated on the eastern edge of the table-land of Brazil, parallel to the Atlantic Ocean. Their position may be compared with that of the Appalachian Mountains of North America.

The Mountains of Guiana form the northern rim of the great basin of the Amazon, and correspond, in position, with the Height of Land in the northern continent, although much nearer the sea.

The three great plains of South America are the Llanos of the Orinoco, the Selvas of the Amazon, and the Pampas of the Rio de la Plata. They will be described more fully in connection with their respective rivers.

The most of South America is situated in the torrid zone, and were the climate determined by the latitude alone, it would be very hot. But the different elevations at which the land lies, influence the temperature more than does proximity to the equator. In the low valleys and plains the climate is very hot, and where there is sufficient rain, large crops of maize, sugar-cane, indigo, cotton, coffee, and tropical fruits are raised. The table-lands and slopes of the mountains have an even and delightful climate, but are subject to severe earthquakes. The principal crops are about the same as those cultivated in the United States. The climate is very cold on the upper slopes of the mountains, and the lofty peaks by which they are crowned, are always covered with snow. The traveler can pass in the course of a few days from the region of the orange and palm to that of perpetual frost and snow.

The vegetation of South America is as diversified as the climate. In the lowlands are found the palm, "cow-tree," India-rubber tree, mahogany, rose-wood, chocolate plant, mandioca, etc. On the plateaus and mountain slopes are the oak, quinine tree, and fir. Mosses and lichens are the characteristic plants of the cold regions.

The mountains and table-lands of South America contain rich mines of silver, gold, copper, quick-silver, and diamonds. The want of good roads is a great drawback to mining, and renders many of the most valuable mines almost inaccessible to the outside world.

The governments of the several countries of the continent, except Brazil and the Guianas, are Republics. Brazil is an Empire, and its white inhabitants are mostly of Portuguese descent, and speak the Portuguese language. The Guianas are

European colonies, and the legal language of each is that of the mother country. The white inhabitants of the republics are mostly of Spanish descent, and speak the Spanish language.

All of the countries of South America, except Bolivia and Paraguay, border on the sea. In the northwestern corner of the continent is the United States of Columbia. It includes the Isthmus of Panama, on which are situated the cities of Aspinwall and Panama. These are connected by a railroad and a ship canal, now in course of construction, will soon join them. Aspinwall was destroyed by fire early in 1885, but will be rebuilt. Cape Gallinas, the most northern point of South America, is in this country.

Bogota, the capital of the United States of Columbia, is situated on a table-land, east of the Magdalena River.

Ecuador lies south of the United States of Columbia.

Quito, the capital of Ecuador, is situated almost on the equator, yet its climate is that of perpetual spring. Why is the climate so mild and equable?

Guayaquil, the chief seaport of Ecuador, is on the Gulf of Guayaquil, an arm of the Pacific.

Peru is the most mountainous country of South America. Its chief source of wealth is guano, which is found on a small group of islands near the coast.

Lima, the capital of Peru, is situated a few miles from the Pacific. It is one of the most beautiful cities of South America. Its seaport is Callao.

Chili is situated mainly in the south temperate zone. It recently acquired by conquest, all of Bolivia that was west of the Andes, and the southern portion of Western Peru. The northern part of the country consists of the desert of Atacama, which is rich in minerals. The central part is a famous grazing region, and supports large herds of cattle, which are raised mainly for their hides and tallow. The southern part of the

country is well suited for agriculture, and is the great wheat field of South America. Chili, also, claims all of Patagonia west of the Andes.

Santiago, the capital of Chili is situated at the western base of the Andes Mountains.

Valparaiso, "the vale of paradise," is the principal seaport of Chili. "The town is lit with gas, is well paved, and has steam fire-engines and street-railways, and a public library." It is the greatest commercial port of the Pacific coast of South America.

Patagonia, the southern country of South America, is unfit for agricultural purposes, and has but few white inhabitants. The part west of the Andes has a very moist, disagreeable climate, and is covered with dense forests. Eastern Patagonia has but very little rain, and the southern part of it is a dreary, desolate region, with hardly any vegetation.

The Strait of Magellan separates the island of Terra del Fuego from Patagonia.

Cape Horn, the southern extremity of South America, is situated on a small island south of Terra del Fuego.

The Argentine Republic is situated in the south temperate zone. Its greatest source of wealth is the vast herds of cattle which roam over the basin of the Rio de la Plata.

Buenos Ayres, the capital of the Argentine Republic, is an important commercial city.

The *Rio de la Plata River* is the second river of South America in size. Its basin consists of vast grassy plains called pampas. It is formed by the union of the Parana and Uruguay Rivers.

Paraguay, a small, inland country of South America, is situated between the Paraguay and Parana Rivers.

Assumption, the capital of Paraguay, has considerable trade in Paraguay tea, tobacco, and hides.

The small country of Uruguay is situated on the left bank of the La Plata River, at its entrance into the Atlantic. The principal occupation is cattle raising.

Montevideo is the capital.

Brazil, the largest country of South America, has an area about equal to that of the United States, exclusive of Alaska, and a population about one-fifth as great. It produces considerable cotton, sugar, and tobacco. Its diamond mines are very important.

Rio Janeiro, the capital of Brazil, and the largest city of South America, is situated on Rio Janeiro Bay. It is an important commercial city, its chief exports being coffee, cotton, sugar, rum, building-timber, leather, tallow, gold, and diamonds.

Cape Frio. Bahia is an important commercial city.

Cape St. Roque, the most easterly point of South America.

Amazon, the greatest river of the world, (though not the longest), rises in Peru, at first flows northwest, but changes its course and flows nearly eastward into the Atlantic Ocean. It is ten miles wide at a distance of 500 miles from the Atlantic. "The volume and impetus of the river are so great that it carries its fresh water unmixed into the sea a distance of about 200 miles." The basin of the Amazon is covered with magnificent forests in which are found many valuable trees and plants.

French Guiana belongs to France, which uses it as a place of banishment for political offenders.

Cayenne, the capital of French Guiana, is situated on an island near the coast. It is very unhealthy.

Dutch Guiana, an important Dutch colony, lies west of French Guiana. The most of the inhabitants are negroes and mixed races.

Paramaribo, the capital of Dutch Guiana, is situated on the Surinam River. It has considerable commerce.

British Guiana, the largest and most important of the Guianas, belongs to Great Britain. The climate is very hot and unhealthy. The principal crops are rice, sugar, maize, vanilla, tobacco, cinnamon, and chocolate.

Georgetown, the capital of British Guiana, is situated on the coast. The most of the streets have canals running through them. The city is an important commercial center.

The country of Venezuela is situated in the northern part of South America, and borders on both the Caribbean Sea and the Atlantic Ocean.

The Orinoco River, the third river of South America in size, is almost entirely in Venezuela. The low plains along the river are known as the *Llanos*. In the rainy season the Llanos are covered with water, and the Orinoco presents the appearance of a great inland sea on its way to the Ocean. In the dry season they are covered with moving hills of sand and dust.

Caracas, the capital of Venezuela, is built on a plateau about twelve miles from the coast. It has considerable commerce through the port of La Guayra.

Maracaybo, a lake in the northern part of Venezuela, is connected with the Caribbean Sea by a narrow channel.



CHAPTER XI.

GREAT BRITAIN AND IRELAND.

Great Britain.—On the island of Great Britain, are situated the countries of Scotland, England, and Wales. Ireland is much smaller than Great Britain, and is situated west of it.

We shall now sail around each of these islands, and notice its principal headlands and indentations, ascend some of its chief rivers, observe its mountains, and visit a few of the largest cities, so as to learn something about them. And when through with our travels, we shall be prepared to talk about the surface, climate, crops, and the occupation of the people.

The *Shetland Islands* are northeast of Scotland and are famous for the "Shetland ponies."

Duncansby Head is the northeast corner of Scotland.

In sailing south along the east coast of Scotland, we notice that we are on the North Sea, and that it washes the east coast of both England and Scotland.

Moray Firth is an arm of the North Sea.

Inverness, the most important city in Northern Scotland, is on a canal which crosses Scotland from Moray Firth to the Atlantic Ocean.

Kinnaird Head is a cape on the eastern coast of Scotland.

Aberdeen, noted for the large number of ships built there annually, is situated on the North Sea.

The Grampian Hills cross Scotland from northeast to southwest. The part of Scotland north of the Grampians is known as the Highlands, the part on the south, as the Lowlands.

Dundee manufactures the most linen and hemp of any city on the Island of Great Britain.

The *Firth of Forth* is an arm of the North Sea.

Edinburgh, the capital of Scotland, is situated two miles south of the Firth of Forth. The city is built on very rough ground, and the houses rise tier above tier on the steep sides of the hills. A person can stand on one street and look down, perpendicularly, upon the roofs of houses on the streets below, which are six stories high.

The *Tweed River* forms a part of the boundary between Scotland and England.

Before proceeding farther let the pupils sketch the east coast of Scotland, showing the places that have been studied.

Newcastle, an important city of England, is noted for its large trade in coal, which is mined in the vicinity. Did you ever hear the expression, "Carrying Coal to Newcastle"? It is also noted for the large number of iron ships built there.

Hull, or Kingston-upon-Hull, is a very important seaport.

The *Humber* is a short estuary, formed by the union of several rivers, of which the Ouse and Trent are the principal ones.

York, a very old city, and also noted for its beautiful cathedral.

Leeds, noted for the manufacture of woolen goods.

Sheffield, noted for the manufacture of cutlery.

Nottingham, noted for the manufacture of hosiery and lace.

Birmingham, the fourth city of England in population, is situated near the Trent. It manufactures all kinds of iron, steel, and brass goods.

The *Wash* is an arm of the North Sea. Notice its shape.

Observe carefully the shape of the coast line between the Wash and the mouth of the Thames River. Sketch the coast from Dundee to the Thames.

The *Thames River* rises in the western part of England. The basin of the Thames is much smaller than that of the Amazon River, but it is far more important. Why so?

London, the capital of the British Empire and the largest city in the world, is situated on both sides of the Thames River. There are more people in the city of London than there are in the State of Illinois, with all of its cities, towns, villages, and farms. It has the most commerce of any city in the world.

The *Strait of Dover* connects the English Channel with the North Sea. Notice the shape of the coast between the Thames River and the Strait of Dover.

Portsmouth is the principal naval station of England.

Land's End is the southwestern point of England.

Bristol Channel, an arm of the Atlantic Ocean.

Severn, one of the principal rivers of England.

Bristol is an important seaport.

Sketch the coast from the Wash to the Severn River.

Merthyr-Tydfil, in the southern part of Wales, is noted for the valuable coal and iron mines in the vicinity.

St. David's Head is the southwestern point of Wales.

St. George's Channel separates Ireland from Wales.

The *Irish Sea* separates England from Ireland.

Liverpool, the second city of Great Britain in commercial importance, is situated on the Mersey River, near the Irish Sea. Vessels from all the important nations of the world may be seen in its docks. It is about the size of Chicago.

Manchester, the leading city of the world in the manufacture of cotton goods, is situated a few miles north of the Mersey River. Its population is about equal to that of St. Louis. Where does the cotton come from that is used in making all these goods? Lead the pupils to see the advantages of commerce.

The *Cumbrian Mountains* are in the northwestern part of England, and are noted for their beautiful scenery.

Solway Firth, an arm of the Irish Sea.

The *Mull of Galloway* is the southwestern corner of Scotland.

Sketch the coast from Land's End to Solway Firth, showing all places studied.

The *North Channel* separates Scotland from Ireland.

Clyde, an important river of Scotland.

Glasgow, the second city of Great Britain in population, is situated on the Clyde River. It is noted for its commerce and manufactures. Its principal manufactures are cotton goods, silks, and iron ships.

Observe that the Firth of Clyde is about due west from the Firth of Forth, and that the distance between Glasgow and Edinburgh is not very great.

The *Hebrides Islands* are west of the northern part of Scotland.

Sketch the island of Great Britain as a whole, and show the position of all places studied.

The surface of Scotland is very rough especially north of the Grampian Hills. South of there, some low land is found, but the area is comparatively small.

The climate of Scotland is mild and healthful.

The chief crops are wheat, oats, barley, rye, and vegetables. Oat meal is one of the staple articles of food in the Highlands.

The fisheries of Scotland are very valuable, and furnish employment to a great many persons.

The southeastern half of England is comparatively low and level, and produces large crops of wheat, oats, rye, barley, vegetables, and fruits.

The northwestern half of England, and all of Wales are very rough, but excellent crops are produced in the valleys. The whole island is well suited for grazing purposes, and cattle raising is very profitable.

In the northern and central parts of England, and also in Wales, coal and iron are found in abundance, and manufacturing is carried on, on a large scale.

Great Britain is especially noted for its immense commerce. Its ships can be found on all seas, and its traders in all the markets of the world.

Ireland. —

Londonderry, an important city of Northern Ireland, is situated on the Foyle River.

The *Giant's Causeway* is a rocky cape at the northeast corner of Ireland.

Belfast, noted for its manufacture of linen.

Dublin, the capital of Ireland, is situated on the Liffey River, at its entrance into the Irish Sea. It is the largest city of Ireland, and has considerable commerce, and some manufactures.

Carnsore Point, is the southeastern corner of Ireland. Note the position of this point with reference to Southwestern Wales.

Cork, the great commercial center of Southern Ireland, is situated on the River Lee, near its entrance into Cork Harbor.

Cape Clear is the southwestern point of Ireland.

Shannon, the largest river of Ireland.

Limerick, the principal seaport on the west coast of Ireland.

Malin Head is the northern point of Ireland.

Sketch Ireland.

The coastline of Ireland is very irregular, being indented by many bays which form safe and convenient harbors.

The surface is very uneven. In the center is a great plain, extending from the Irish Sea to the Atlantic Ocean. North and south of this plain are found many isolated mountain systems.

The climate is very moist, and without extremes of heat or cold.

Wheat, oats, barley, rye, potatoes, and turnips are the principal crops. Cattle raising is a profitable industry.

Minerals are not found in sufficient quantities to pay for mining.

CHAPTER XII.

NORWAY, SWEDEN, NORTHWESTERN RUSSIA, DENMARK,
HOLLAND AND GERMANY.

North Cape is the northern point of Europe.

Hammerfest, the most northern town of Europe, is an important fishing station.

Call attention to the eight or ten weeks continuous sunlight at this place in the summer; and to the absence of the sunlight for the same length of time in the winter. It will interest the children.

Bergen, the second city of Norway in population, has a large trade in fish.

The *Naze* is the southern point of Norway.

Skager Rack Channel separates Norway from Denmark.

Christiania, the capital of Norway, is situated at the head of a bay of the same name. It is an important commercial city.

Cattegat Channel separates Denmark from Sweden.

Goteborg, the second city of Sweden in size, is situated east of the north end of Denmark.

The *Baltic Sea*.

Carlskrona, a strongly fortified city of Sweden, is situated on several small islands in the Baltic.

Stockholm, the capital of Sweden, is built partly on islands in the outlet of Lake Maelar. Small steamers are used very extensively for travel in the city.

The *Gulf of Bothnia* is the northern part of the Baltic Sea.

We have now sailed around the peninsula of Scandinavia, observed its shape, and located a few of its principal capes and cities. Let the pupils make a sketch of the peninsula, showing the points learned.

The Scandinavian Mountains extend from the northern point of the peninsula to near the Naze, and their line of highest elevation forms the boundary, for most of the distance, between Norway and Sweden. The Norwegian slope of the mountains is not, on an average, more than one-fourth as wide as the Swedish slope, hence the surface of Norway is much more broken than that of Sweden.

Where the nature of the surface admits of it, farming is the leading occupation of the people. Sweden produces large crops of wheat, oats, rye, barley, and vegetables. The southern part of Norway is a fair farming country, but the northern part is too rough.

Fishing furnishes employment for a large number of persons, and many of the people of both countries are engaged in felling trees and making them into lumber.

The people who live in Norway are called Norwegians, and those who live in Sweden are called Swedes. Have you ever seen any of either?

Lapland is situated partly in Norway and Sweden and partly in Russia. It is a cold, dreary region, unfit for farming. The inhabitants are short in stature, but very strong. Those who dwell near the shore, live mainly by fishing, and those who reside in the interior of the country depend almost altogether on their reindeer for a livelihood. There are no cities in the country.

Finland is a province of Russia, and is situated on the east side of the Gulf of Bothnia, south of Lapland. It is noted for its large number of lakes. There are a few small cities in the southern part of the country.

Gulf of Finland, a long, narrow arm of the Baltic Sea.

St. Petersburg, the capital of Russia, is situated on the Neva River, near its mouth. The city is built on very low ground, and is about the size of Philadelphia. The climate is very cold in the winter.

Lake Ladoga, the largest lake of Europe, is east of St. Petersburg; the Neva River is its outlet.

The *Gulf of Danzig* is an arm of the Baltic Sea.

Vistula, an important river of Northern Europe.

Danzig, the principal grain market of Germany, on the Baltic Sea, is situated on the Vistula, near its mouth. Many of its streets have canals passing through them.

Warsaw, an important city of Russia, is extensively engaged in manufacturing.

Lubeck, the oldest city on the Baltic, has considerable commerce, and is largely engaged in building ships.

Sketch the east coast of the Baltic Sea.

Passing out of the Baltic Sea by the same route that we entered, we come to

Copenhagen, the capital of Denmark. The city is built on an island, and is one of the great commercial centers of Europe.

The kingdom of Denmark occupies the northern half of the peninsula of Jutland, and several adjacent islands.

The surface of the country is comparatively level, but the soil is not very fertile. Yet, by careful farming, large crops are raised. Much attention is given to the rearing of live stock. The people of Denmark are called Danes.

Sailing south on the North Sea, we soon come to the

Elbe River, which rises in the northern part of the Austrian Empire, and flows northwest into the North-Sea.

Hamburg, the foremost city of the continent in Commerce, is situated in the northern part of Germany, on the Elbe River. The largest ocean vessels ascend the river to the city.

Berlin, the capital of Germany, is situated on the Spree River; it is about as large as New York. Its manufactures are very valuable.

Dresden, the most pleasant city in Germany, is noted for its many beautiful works of art.

Weser River. *Bremen*, an important seaport of Germany, is noted for the large number of emigrants who sail from there to America.

The *Zuider Zee* is an arm of the North Sea.

Amsterdam, the largest city of Holland, is built on ninety islands, in an arm of the *Zuider Zee*. The different parts of the city are connected by three hundred and fifty bridges. Canals pass through all parts of the city. Amsterdam is a very important commercial city.

The *Rhine River* enters the North Sea through several mouths.

The Hague, the capital of Holland, is situated near the North Sea, between two of the mouths of the Rhine. It is a beautiful city, with broad streets, and large squares full of trees.

Rotterdam, the most thriving city of Holland and one of its great commercial centers.

Holland is one of the smaller countries of Europe, and looks out upon the North Sea, from which much of its soil had to be won. How?

The surface is low and level. A large part of the country is so very low that it has to be protected from the North Sea by means of dykes.

The country is crossed in all directions by canals which serve both for the draining of the land, and as a means of communication. Canals run from town to town, and from there to villages which are themselves connected by other canals.

Agriculture and commerce are the chief occupations of the people.

Ascending the Rhine River, we come to

Cologne, situated on the west bank of the Rhine, in the northwestern part of Germany. The city is noted for the manufacture of perfumery.

Coblenz, an important commercial city.

Mainz, a famous military station, is situated on the Rhine River, opposite the mouth of the Main River. Note carefully the shape of the Rhine between Coblenz and Mainz.

Frankfort, one of the great money marts of Europe, is on the Main River.

Strassburg is an important city of Germany. The Cathedral of Strassburg is noted for its beauty, and for the height of its spire.

Basel, an important commercial city, is situated on the left bank of the Rhine, in the northwestern part of Switzerland. Observe the great bend of the Rhine, near this city.

Bern, the capital of Switzerland, is situated on the Aar River.

Lake Constance, an expansion of the Rhine, is bordered by the countries of Austria, Germany, and Switzerland.

The *Rhine River* rises among the Alps Mountains, near the southern boundary of Switzerland.

Sketch the Rhine River, showing its tributaries and principal cities. Name the countries through which it passes, and those between which it forms the boundary.

The German Empire consists of a number of kingdoms, duchies, and principalities.

The surface slopes to the north, being mountainous in the south, and low and level in the north.

The climate is cold-temperate, and nearly alike in the different parts of the empire.

The principal crops are rye, wheat, barley, flax, hemp, potatoes, sugar-beet, hops, and tobacco. The nation does not produce quite grain enough for its own wants.

Germany is rich in coal, iron, zinc, lead, and copper mines. It ranks next to England and the United States in its iron works. It is extensively engaged in the manufacture of linen, cotton, and woollen goods. Its glass works and potteries are very important, but are far surpassed in value by the products of its breweries and distilleries.

CHAPTER XIII.

BELGIUM, FRANCE, SPAIN, PORTUGAL, AND SWITZERLAND.

Antwerp, the second city of Belgium in population, is on the Schelde River. It is noted both for its commerce and important manufactures.

Brussels, the capital and largest city of Belgium, is situated on a southern tributary of the Schelde. The city is noted for the manufacture of fine laces, carpets, linens, silks, cottons, ribbons, and machinery.

Waterloo, a famous battle field, is situated nine miles south of Brussels.

Ghent, the third city of Belgium in population, is situated on the Schelde, in the northwestern part of the country. Rivers and canals divide the city into twenty-four islands. It is an important commercial and manufacturing city.

Belgium is a small country, and has the most persons to the square mile of any country in Europe.

With the exception of a few hills in the southeast the country is low and level.

The soil is carefully tilled and made to yield large crops of wheat, rye, oats, flax, hops, potatoes, hemp and tobacco.

Owing to the abundance of coal and iron in the country, manufacturing is carried on very extensively. The chief articles manufactured are fire-arms, cutlery, cotton and linen goods, carpets, machinery, lace, and paper.

Bound Belgium.

Lille, or Lisle, the fifth city of France in population, is situated in the northwestern part of the country. It is the principal seat of the French linen and cotton manufactures.

Calais, a fortified seaport of France, is situated on the Strait of Dover. A large number of travelers cross the strait from England to Calais, annually.

LeHavre, the principal port of Western France, is situated at the mouth of the Seine River. It has a very extensive commerce.

Paris, the capital of France, is situated on both banks of the Seine River. It is about as far north as the northern boundary of the United States, and is about twice as large as the city of New York. Paris is a beautiful city, and has much to charm and delight those who visit it.

Brest, next to Toulon the greatest naval arsenal of France, is situated on the peninsula of Brittany. The city is connected with a little town near Boston by a telegraph cable.

Bay of Biscay.

Orleans, a famous historical city of France.

St. Etienne, "the Pittsburg of France," owes its prosperity to the immense coal fields by which it is surrounded. The city is noted for the manufacture of iron ware of all kinds, and silk ribbons

The *Gironde River*. *Bordeaux*, the third port of France in importance, is surrounded by the great vine-growing regions of the country; its chief exports are wines, brandies, and fruits.

The *Pyrenees Mountains*. Sketch the coast of France from Belgium to the Pyrenees.

Cape Ortegal is the northwestern corner of Spain.

Ferrol, situated south of Cape Ortegal, is a great naval station and fortress.

Cape Finisterre is the western point of Spain.

Douro, a river of Spain and Portugal.

Oporto is the second city of Portugal in population and commercial importance and the first in manufactures. The country around Oporto is largely engaged in the cultivation of the vine.

Tagus, a river of Spain and Portugal.

Lisbon, the capital and largest city of Portugal, and its most important commercial center.

Madrid, the capital of Spain, is in the midst of a very barren district.

Cape St. Vincent is the southwest corner of Portugal.

Guadalquivir, the only river of Spain that is navigable for any considerable distance.

Seville is noted for the manufacture of silks and stuffs interwoven with gold.

Cadiz, an important commercial city of Spain, is on a small island near the coast.

The Strait of Gibraltar is about fifteen miles wide in the narrowest part.

Gibraltar, the strongest fortress in the world, is on the north side of the Strait of Gibraltar. It belongs to Great Britain.

Malaga, one of the leading commercial cities of Spain, is situated on the Mediterranean Sea. Its chief exports are raisins, almonds, figs, lemons, oranges, and wine.

The Ebro River. Pyrenees Mountains.

In passing around the peninsula, call attention to the parallelism of the rivers flowing into the Atlantic. Show that in going north or south through Spain, mountain chains and river basins will be found alternating.

Both Spain and Portugal are rich in minerals, especially iron, copper, lead, coal, and mercury.

Cork is a product of both countries. Is it a mineral?

Sketch Spain and Portugal.

The Gulf of Lyons is an arm of the Mediterranean Sea.

In ascending the Rhone River, we notice that the Cevennes Mountains are on the west and the Alps Mountains on the east. The latter are on the boundary between France and Italy. There is a railroad passing from France into Italy through a tunnel eight miles in length. What long tunnel have we already learned about?

Lyons, at the junction of the Saone and Rhone Rivers, is the great center of the silk industry in France.

Geneva, the largest city of Switzerland, is at the western extremity of Lake Geneva. Its leading manufactures are watches, music boxes, and jewelry.

Lake Geneva is the largest lake of Western Europe.

Mt. Blanc, the highest point of Europe, is at the junction of France, Italy, and Switzerland.

The Rhone River rises on the slopes of Mt. St. Gothard.

What other rivers rise on the same mountain?

Before leaving Switzerland, review thoroughly all that has been learned concerning it. Picture to your pupils its grand mountains, beautiful lakes, and swift flowing rivers. Let them bring in any picture they may have of any of these objects.

Switzerland is a Republic.

Marseilles, the leading commercial city of the Mediterranean, is in the southeastern part of France.

Toulon is the great naval station of France on the Mediterranean.

The surface of France is comparatively low and level in the west, and high and rough in the east and southeast.

Farming is the leading occupation of the people, France being one of the best agricultural countries in the world. The leading crops are wheat, oats, barley, grapes, vegetables, and tobacco.

France is a republic.

Review all that has been studied about France, and have the pupils make a sketch of the country. When the sketch is finished, let them name the surrounding countries and waters. As a further test of their knowledge of the work, let them arrange the points studied, in the form of a scheme. The accompanying form will answer, if a better one is not thought of at the time.

1. Boundaries. {
 1. Belgium.
 2. Germany.
 3. Switzerland.
 4. Italy.
 5. Mediterranean Sea.
 6. Spain.
 7. Atlantic Ocean.
 8. English Channel.
 9. Strait of Dover.
2. Bays. {
 1. Biscay.
 2. Lyons.
3. Surface. {
 1. West—Low and Level.
 2. East and Southeast. {
 1. Alps.
 2. Cevennes.
 3. Pyrenees.
4. Rivers, {
 1. Seine.
 2. Loire.
 3. Gironde.
 4. Rhone.
5. Chief Industries. {
 1. Agriculture.
 2. Manufactures.
 3. Commerce.
6. Cities. {
 1. Commercial. {
 1. Calais.
 2. Le Havre.
 3. Paris.
 4. Bordeaux.
 5. Marseilles.
 2. Historical.—Orleans.
 3. Manufacturing. {
 1. Lille, or Lisle.
 2. St. Etienne.
 3. Lyons.
 4. Naval Stations. {
 1. Brest.
 2. Toulon.
7. Government—Republic.

CHAPTER XIV.

ITALY, MONTENEGRO, GREECE, AND TURKEY.

Genoa, the birthplace of Columbus, is the chief commercial city of Italy.

Florence, "the city of flowers," is noted for its art galleries and museums.

Corsica, an island west of Italy, belongs to France. It is the birthplace of Napoleon the Great.

The island of Sardinia is south of Corsica. It belongs to Italy.

Rome, the capital of Italy, is situated on the Tiber River. It is the residence of the Pope and contains the largest church (St. Peter's) in the world.

Naples, situated on a beautiful bay of the same name, is the most populous city of Italy, and ranks next to Genoa in commercial importance.

Mt. Vesuvius, an active volcano. *Strait of Messina*.

Palermo, the principal city of Sicily.

The *Strait of Otranto* connects the Adriatic Sea with the Mediterranean.

The *Po River* flows east into the Adriatic Sea. It is about as far north as the northern boundary of New York and Vermont. Observe that the basin of the Po is surrounded by mountains on three sides.

Milan, one of the leading cities of Italy, is situated in a fertile plain north of the Po River. It is noted for its beautiful cathedral.

Turin, an important manufacturing city, is situated on the Po. One of the principal tributaries of the Po rises on Mt. St. Gothard. What other rivers rise on this mountain?

A railroad tunnel, ten miles in length, passes through the St. Gothard Pass, connecting Italy and Switzerland. Tell how these tunnels have been built.

Venice, situated in the northwestern part of Italy on the Gulf of Venice, is built on eighty islands, and intersected by one hundred and forty-seven canals. It has considerable commerce. Mention other cities in which there are many canals.

Sketch Italy, and fix its northern boundary.

The surface of Italy may be divided into two grand divisions, the basin of the Po, and the boot-shaped peninsula on the south. The peninsular part of Italy is traversed throughout its entire length by the Apennine Mountains, which form its water-shed. The mountains are east of the center, hence, the largest plains and longest rivers are on the west side.

On account of its position, and great length from north to south, Italy enjoys a varied, and delightful climate, which permits the cultivation of all the common grains and fruits, and a variety of tropical products. The island of Sicily is famous for its oranges and lemons.

Italy is rich in marble, sulphur, borax, alum, and alabaster.

Austria joins Italy on the east, and extends south along the eastern side of the Adriatic for a considerable distance.

Trieste, the chief commercial city of Austria, is situated at the head of the Adriatic Sea, east of Venice. Merchants from all civilized nations come here to trade.

The principality of Montenegro is situated on the east side of the Adriatic, south of Austria. It is very mountainous.

Cettinje is the capital.

South of Montenegro, Turkey borders on the Adriatic.

Strait of Otranto.

The *Gulf of Lepanto* almost divides Greece into two parts.

The peninsula, south of the Gulf of Lepanto, is named the *Morea*.

Cape Matapan is the southern point of the mainland of Greece.

Sparta, anciently a very famous city.

Candia, or Crete, a large island south of Greece, belongs to Turkey.

The City of Corinth is situated on the isthmus which connects the *Morea* with the rest of Greece.

Athens, the capital of Greece, is situated a few miles inland.

Negropont, or Eubæa, is a long, narrow island, east of Greece.

The surface of Greece is very mountainous, and because of the difficulty of building roads, the different parts of the country have but little intercourse.

The ordinary grains are raised, and tobacco, madder, figs, and oranges can be profitably cultivated. But agriculture progresses slowly, only one-seventh of the area being under cultivation.

Olympus, a very famous mountain, is situated in the southern part of Turkey, west of the Gulf of Salonica.

Salonica, a city of Turkey, is on the Gulf of Salonica.

Adrianople, an important city of Turkey, is noted for the manufacture of Attar of Roses.

The *Strait of Dardanelles*. *Marmora Sea*, noted for the marble quarries on its islands.

Bosporus, a narrow strait, connecting the Sea of Marmora with the Black Sea.

Constantinople, the capital and largest city of Turkey, is situated on the European side of the Bosporus, at its junction with the Sea of Marmora. The city is a great commercial center.

Black Sea. The *Balkan Mountains* may be said to form the northern boundary of Turkey, as the province between the Balkans and the Danube is almost entirely independent of Turkish control.

The surface of Turkey is diversified with mountain, plain, and valley. Nearly all of it is well fitted for farming, but that noblest of callings is carried on in a very slovenly manner.

The principal crops are wheat, rye, oats, and barley in the north; and maize, cotton, olives, citrons, and tobacco in the south. Did you ever see any maize?

The leading minerals are iron, lead, salt, and marble; but none of these are mined in sufficient quantities to be of much benefit to the nation.

The manufactures of Turkey are varied, but are all on a small scale.

CHAPTER XV.

ROUMANIA, SERVIA, AUSTRIA, AND RUSSIA.

The *Danube River* rises in the southwestern part of Germany, near the great bend of the Rhine at Basel, and flows in a general southeasterly direction into the Black Sea. On the north side of the river, at its mouth, is Russia, and on the south side is Roumania.

The *Pruth River*, a northern tributary of the Danube, forms the boundary between Russia and Roumania.

Roumania, an independent Kingdom of Europe, is bounded on the north by Austria and Russia, on the east by Russia and the Black Sea, on the south by Turkey (nominally), and on the west by Servia and Austria. It is an agricultural country, and each head of a family is entitled to a piece of land containing from seven to sixty-seven acres. Grain is the principal export.

Bukharest, the capital of Roumania, is situated north of the Danube River. It is one of the most populous cities of South-eastern Europe.

Servia is an independent Kingdom of Europe. Its surface is everywhere very rocky and mountainous, except along the Save River.

Agriculture is in a backward state, and manufactures can hardly be said to exist.

Belgrade, the capital of Servia, is situated at the junction of the Save River with the Danube. It has considerable commerce.

The *Save River* is on the boundary between Austria and Servia.

The Austrian Empire consists of several countries and provinces, Hungary and Bohemia being the most important.

Hungary consists of a large, low plain, and is situated in the midst of the empire.

Buda-Pesth, the capital of Hungary is situated on both banks of the Danube, a short distance from one of its principal bends. The two parts of the city are connected by two iron bridges. It is growing rapidly, and has a very extensive commerce.

Bohemia, a country of the Austrian Empire, is situated in the basin of the Elbe River. It is surrounded by mountains on all sides.

Prague, the capital of Bohemia, is situated on a branch of the Elbe River.

Vienna, the capital of the Austrian Empire, is situated on the Danube River. It is a well built city, and has the largest park in Europe. It is extensively engaged in the manufacture of silks, carriages, steam engines, and machinery.

The Austrian Empire is well suited to farming, and the great wealth of the nation consists largely in agricultural products. The principal crops are wheat, oats, barley, potatoes, sugar-beet, flax, hemp, tobacco, and olive oil.

The chief minerals are coal, iron, salt, sulphur, gold, and silver.

A large share of the commerce of the nation is carried on by way of the Danube River.

RUSSIA.—Review what has already been learned about Russia, and in the further study of the country notice that it includes most of the lowland of Europe, and comprises more than half of the whole continent.

The principal watershed of Russia extends from southwest to northeast. And as it is north of the center of the empire, the longest rivers flow south into the Black and Caspian Seas.

The climate is very cold, and the winters are long and severe in all parts of the empire. But the summers, though short, are very hot.

Russia is an agricultural country and produces the most grain of any country in Europe. The principal crops are rye, oats, wheat, and barley. In the production of flax and hemp, Russia equals the rest of Europe.

The chief minerals are coal, iron, gold, platinum and copper.

The principal manufactures are woolens, silks, linens, cotton, soap, and porcelain.

Odessa, the principal seaport of Russia, is situated on the Black Sea, west of the mouth of the Dnieper River. It exports large quantities of wheat, wool, tallow, and flax.

Dnieper, one of the largest rivers of Russia.

Sabastopol, a strongly fortified city.

The *Sea of Azov*. The *Caucasus Mountains*, are on the boundary between Europe and Asia. The Russian possessions extend south of the Caucasus.

The *Caspian Sea*. *Volga*, the largest river of Europe, rises in the northwestern part of Russia, and flows southeast into the Caspian Sea.

Astrakhan, an important city, is noted for its valuable fisheries.

Moscow, situated almost in the center of the empire, is in the basin of the Volga. It is the most famous city in Russia.

The *Ural Mountains* are on the boundary between Europe and Asia.

The *Arctic Ocean*.

Let the pupils complete the scheme on the next page.

Russia.	1. Boundaries.	}
	2. Surface.	}
	3. Rivers.	}
	4. Lake.	
	5. Chief Products.	{ 1. Agricultural. } { 2. Mineral. } { 3. Manufactures. }
	6. Cities.	{ 1. 2. 3. 4. 5. 6.

CHAPTER XVI.

SIBERIA, JAPAN, COREA, CHINA, ANAM, CAMBODIA, SIAM,
AND BURMAH.

Asia is the largest of the continents, and is almost an island.

Nearly all of the highlands are in the interior, and surrounded by lowlands. The great plateau of Central Asia is the largest in the world. It is bounded on the north by the Altai Mountains and on the south by the Himalaya mountains. The largest part of the plateau is a desert.

SIBERIA.—The great plain which stretches from the Altai Mountains to the Arctic Ocean, and from the Ural Mountains to Behring Strait is known as Siberia, and belongs to Russia. It is a cold, dreary region, facing the North pole, and is inhabited by uncivilized, wandering tribes, and by prisoners exiled from Russia in Europe.

A few of the hardier grains and vegetables grow in the valleys of the south, but the northern part of the country is a barren waste, frozen to unknown depths, and never thawing more than a few inches in the short, hot summer.

If we start from the northwestern corner of Siberia and travel east, we come to the

Gulf of Obi, an arm of the Arctic Ocean.

Obi River, one of the principal rivers of Siberia.

The Yenisei River rises among the Altai Mountains, and flows north into the Arctic Ocean.

Irkoutsk, the largest city of Siberia, is on a tributary of the Yenisei. It is an important commercial city.

Lake Baikal, the largest body of fresh water in Asia, is situated among the Altai Mountains.

Northeast Cape is the most northern point of Asia.

The Lena River is one of the great rivers of the world. It is about six miles wide at a distance of 800 miles from its mouth.

Behring Strait.

Aleutian Islands, a chain of islands extending from Asia to America, belong to the United States. They furnish large quantities of valuable furs.

Kamchatka Peninsula.

Amoor River separates, in part, the Chinese Empire from Siberia.

Sketch the northern and eastern coasts of Siberia.

JAPAN.—The Empire of Japan consists of nearly 4000 islands, but the most of them are very small.

It may justly be termed a mountainous country. Some of the mountains are very high, and among them are several volcanoes. Much of the surface is unfit for cultivation on account of its rugged nature; some of the mountains abound in gold, silver, copper and coal.

The climate is warm-temperate, consequently the vegetation is luxuriant in the lowlands. The principal products are rice, cotton, tea, wheat, barley, Indian corn, and silk.

Tokio, the capital of Japan, is situated on Nippon, the largest of the Japan islands. The city is nearly as large as Philadelphia.

CHINA.—The Chinese Empire is the principal nation of Eastern Asia. It is situated on the Pacific Ocean, opposite the United States.

The surface is low in the east, hilly in the center, and mountainous in the west. The basins of two great rivers—Hoang-Ho and Yang-tse-Kiang—extend through the empire from west to east. The mountains are rich in gold, silver, copper, lead, iron, and coal.

In Northern China, wheat, millet, buckwheat, Indian corn,

and Irish potatoes are cultivated. Excellent cotton is also produced in large quantities. In Southern China, rice, sugar-cane, and tropical fruits abound. Tea and silk are among the leading productions of the country, and form its principal exports.

Corea, "the hermit kingdom," is on a peninsula, southeast of China.

Peking, the capital and largest city of China, is in the northern part of the Empire. In size it ranks with Berlin, Vienna, and New York. The most of the houses are only one story high, the floor is of earth or brick, and the windows of oiled paper.

Hoang-Ho, "Yellow River," one of the principal rivers of China, flows into the Yellow Sea.

Yang-tse-Kiang, "son of the sea," the largest river of China, rises in the western part of the Empire, and flows east into the Pacific Ocean. It ranks with the Mississippi and Amazon in size and importance.

Shang-Hai is an important commercial city.

Formosa Island is noted for its exports of rice, camphor, coal, and tea.

Hong-Kong, one of the great centers of foreign trade in China, is situated on the Island of Hong-Kong. It belongs to Great Britain.

Canton, the chief commercial city of China, is situated in the southern part of the country, on the Canton River. It is the great center of silk manufacture in China.

АНАМ.—The country of Anam lies south of China. It consists of three provinces, Tonquin, Cochin China, and Lower Cochin China. The last belongs to the French, who at present claim a protectorate over the whole kingdom. The productions are about the same as those of Southern China.

Hue is the capital of Anam.

Saigon is the capital of Lower Cochin China.

Cambodia River forms the boundary, in part, between Anam and Siam.

Cambodia is a small country in the southeastern part of Asia.

Panompin, the capital of Cambodia, consists largely of bamboo huts.

Gulf of Siam.

SIAM.—The country of Siam lies northwest of Cambodia.

The seasons are two in number, a wet or hot season, and a dry or cool one. Vegetation is luxuriant and plentiful; more than half the country is covered with forests.

Rice, sugar, pepper, cotton, and hemp are the chief productions.

Bangkok, the capital of Siam, extends four or five miles along both banks of the Menam River. The majority of the houses are either built upon rafts floating in the river, or on piles driven along the banks.

Singapore, an important commercial city, is situated south of the Malay Peninsula. Ships can be found here, loading for all parts of the world with spices, rattan, oil, etc. It belongs to Great Britain.

The Malay Peninsula is a long, narrow strip of land, belonging to Great Britain, Siam, and a few native princes.

The Strait of Malacca separates the island of Sumatra from the Malay Peninsula.

Bay of Bengal.

British Burmah, a strip of country along the east coast of the Bay of Bengal. Rangoon is its capital.

Irrawaddy River, one of the great rivers of Asia, rises in the western part of the Chinese Empire, and flows into the Bay of Bengal.

Burmah. This country lies north of British Burmah and Siam. It is well fitted for agriculture, which is carried on, however, in a very primitive manner. But, owing to the great fertility of the soil, large quantities of rice, maize, millet,

wheat, cotton, tobacco, and indigo are produced. Pine apples, oranges, and papaws are the principal fruits.

Mandalay, the capital of Burmah, is on the Irrawaddy River. Most of the houses are made of bamboos and mats, and are thatched over with grass; only foreigners are allowed to live in brick houses.



CHAPTER XVII.

INDIA, BELOOCHISTAN, AFGHANISTAN, TURKESTAN, PERSIA AND ASIATIC TURKEY.

India occupies the central one of three great peninsulas that project southward from the mainland of Asia. It is bounded on the north by the Himalaya Mountains, on the east by Burmah and Siam, on the south by the Bay of Bengal and the Arabian Sea, and on the west by Beloochistan and Afghanistan.

The surface of India consists of the basins of the Ganges and Indus, and the table-land of the Deccan. The soil is very fertile and is made to yield two crops a year. Rice, Indian corn, sugar-cane, cotton and indigo grow in the summer; wheat, potatoes, oats, barley and cabbage in the winter.

The houses of the poor are made of mud, and have no doors or windows toward the street. The country belongs to Great Britain. We will begin with:

Brahmapootra, one of the chief rivers of Asia. It rises north of the Himalayas, and flows south into the Bay of Bengal.

Ganges, the sacred river of the Hindoos, has its source in the Himalayas, and flows into the Bay of Bengal through several mouths.

Calcutta, the capital, and largest city of India, is situated on the Hoogly River, the principal mouth of the Ganges. It has a very extensive commerce; rice, opium, indigo, cotton and raw silk being the chief exports.

Delhi, the center of Mohammedan learning and religion in India, is situated on a tributary of the Ganges. It was for-

merly the capital of the country, and was renowned for its great wealth and splendor.

Madras, one of the principal cities of India, is situated on the west coast of the Bay of Bengal.

Ceylon, a large island south of India, belongs to Great Britain. The cocoa-nut palms are very abundant on the island, and are to the people, food, drink and clothing. Have we any such tree? Any animal that does about all that the cocoa-nut does? Coffee is one of the staple productions of Ceylon.

Cape Comorin is the southern point of the mainland of India.

Bombay, a large city of India, situated on the Arabian Sea, is next to Calcutta in population and commercial importance.

The Indus River rises north of the Himalayas.

Cashmere, a small country, about the size of Connecticut, is situated on the southern slope of the Himalayas, near the Indus. It is noted for its shawls. Capital, Cashmere.

Make a sketch of India, showing the mountains, rivers and cities mentioned in the text.

Beloochistan is a mountainous country west of India. The climate and productions vary with the elevation. In the low, hot plains, rice, sugar-cane and tobacco are produced; while in other parts, wheat, barley, madder, melons and pomegranates are the principal productions.

The people are not very highly civilized, but understand some of the ruder arts and manufactures. They live in tribes, each subject to its own chief, and all subject to the "great Khan of Kelat," whose rule is absolute. The capital is Kelat.

Afghanistan.—Lies north of Beloochistan, which country it so closely resembles that no separate description is necessary. The people are very brave. The Hindoo Koosh Mountains extend east and west through the northern part of the country. Capital, Cabool.

Independent Turkestan.—“The land of the Turks,” lies north of Afghanistan and Persia. Russia has annexed nearly all of this country to her own domain, and now joins Afghanistan and Persia, a fact which is not at all pleasing to Great Britain. Why? The people, customs and productions of the country resemble those of Beloochistan and Afghanistan. Locate the *Aral Sea*.

PERSIA.—A country of Southwestern Asia, is situated mainly on the great plateau of Iran.

Owing to its elevation, the greater part of Persia has a very cold climate in winter, while the lowland along the Persian Gulf has an excessively hot climate in summer. There are no rivers of importance in Persia, and lack of water is one of the great drawbacks to the nation's prosperity.

The principal productions are rice, indigo, madder and tobacco.

The commerce of Persia is considerable, and is carried on mainly on the backs of camels. Capital, Teheran.

The Strait of Ormuz connects the Persian Gulf and the Arabian Sea.

The Persian Gulf is between Persia and Arabia; it has valuable pearl fisheries.

Asiatic Turkey may be divided into the basins of the Tigris and Euphrates rivers, Arabia, Syria and Asia Minor. Much of it is a desert, and the fertile portion is, in general, very poorly cultivated. The principal crops are wheat, barley, millet, dates, coffee, apricots and pomegranates.

The most of the inhabitants are Arabs, many of whom have no fixed habitations, but live in tents and wander over large areas of country in order to find pasturage for their flocks and herds, on which they depend for a livelihood.

Euphrates, the principal river of Asiatic Turkey, rises near

Mount Ararat and flows into the Persian Gulf. The ruins of Babylon are on the Euphrates River.

ARABIA is the most western of the great peninsulas that project southward from Asia.

Mocha, a city in the southwestern part of Arabia, is noted for its export of coffee. What kind?

Mecca, the sacred city of the Mohammedans, is situated in the western part of Arabia, at some distance from the coast. It is the birthplace of Mohammed, and all good Mohammedans pray with their faces towards Mecca.

The *Red Sea* is connected with the Mediterranean by a canal through which large vessels can readily pass.

SYRIA borders on the east end of the Mediterranean Sea, and extends eastward to the basin of the Euphrates River. The southwestern part of it is Palestine, or the Holy Land. Most of the events recorded in the Bible happened in Palestine. It was here that Christ lived and taught the people.

Jerusalem, the capital of Palestine, was at one time a very important city, but is of little importance at present.

Bethlehem, the birthplace of Christ, is about six miles south of Jerusalem.

The *Dead Sea* forms a part of the eastern boundary of Palestine. It has no outlet, hence its waters are salt.

The *Lebanon and Anti-Lebanon Mountains* are two parallel ranges in the northern part of Syria. They extend north and south, at a short distance from the Mediterranean. The Lebanon range is the western one.

Damascus, the largest city of Asiatic Turkey, is situated on a beautiful plain, at the east base of the Anti-Lebanon Mountains. It is said to be the oldest city in existence.

The Island of Cyprus is in the northeastern corner of the Mediterranean Sea. It is under the control of Great Britain.

Asia Minor is a large peninsula at the western extremity

of Asia. It projects westward. Do you know any others that extend west? Any north? Any south? Any east?

Let the pupils name, in order, the bodies of water by which it is bordered; nearly all of them were noticed when Europe was studied.

Smyrna, the principal city of Asia Minor, is situated on the western coast. It is a busy, enterprising city, and has an extensive commerce.



CHAPTER XVIII.

AFRICA, AUSTRALIA, AND THE ISLANDS OF THE PACIFIC.

Africa, the second of the continents in size, but the least in importance, is situated southwest of Asia, to which it is connected by the Isthmus of Suez.

It bears a marked resemblance to South America in form, both being triangular, wide at the north and narrowing towards the south. Its coastline is more regular even than that of South America, and contains few good harbors.

The surface consists of a great plateau, which approaches close to the ocean on all sides, leaving but a narrow strip of lowland along the coast. The plateau is higher in the south than it is in the north, and is surrounded by mountain ranges, of which the Atlas Mountains, the Kong Mountains, and the Mountains of the Moon are the principal ones. The northern part of the plateau consists of the Sahara Desert, some parts of which are below the level of the sea.

The principal rivers of Africa are the Nile, Niger, Congo, Orange, and Zambesi. Owing to the nature of the surface, these rivers are obstructed by falls and rapids, consequently, with the exception of the Nile, they are of little value to commerce.

Africa lies almost entirely within the tropics, and is the hottest of the continents. The climate of the west coast is very unhealthy, and proves fatal to foreigners.

Egypt, the most important country of Africa, is situated in the northeastern part of the continent. The habitable part of the country consists of the narrow valley of the Nile, and the lowland along the Mediterranean Sea; the rest of the country is a desert.

The principal crops are cotton, maize, durra, wheat, rice, sugar-cane, flax, hemp, melons, oranges and bananas.

Egypt is nominally dependent on Turkey.

Alexandria, the chief commercial city of Egypt, is situated on the Mediterranean Sea, near the western mouth of the Nile.

Cairo, the capital of Egypt, is on the Nile River. The streets are narrow and crooked, and the upper stories of many of the houses project over the lower ones.

The *Soudan* is a name given to a large region of desert country lying south of Egypt. Its capital is Khartoum, at the junction of the Blue with the White Nile. The Nile drains Lakes Albert and Victoria.

The four countries which border on the Mediterranean Sea, west of Egypt, are sometimes called the *Barbary States*. They are

Tripoli, whose capital is the city of Tripoli;

Tunis, capital, the city of Tunis;

Algeria, capital, Algiers; and

Morocco, whose capital is Fez.

Cape Blanco is the most northern point of Africa.

The country of Algeria belongs to France.

Cape Verd is the most western point of Africa.

The *Gulf of Guinea* is on the west coast of Africa.

Cape Colony, the most important country of South Africa, belongs to Great Britain. Its capital is Cape Town.

Cape Agulhas is the most southern point of Africa.

The *Island of Madagascar* is east of Africa, in the Indian Ocean; it is separated from the continent by the Mozambique Channel.

Cape Guardafui is the most eastern point of Africa.

Australia, the smallest of the six continents, is situated south of Asia. It is about as large as the United States, excluding Alaska. The entire continent belongs to Great Britain.

The coast line is very regular, there being no indentations of any note, except the Gulf of Carpentaria, in the north.

The surface is a low plateau, which is generally lower in the interior than it is along the margins.

The climate is warm but healthful. But little rain falls in the interior; hence, much of the continent is only fit for grazing, and some parts of it are entirely destitute of vegetation.

The rivers are few and unimportant; and most of the lakes are salt, and so shallow that many of them dry up at times.

The continent has rich deposits of gold, copper, tin and bituminous coal; and mining is one of the principal industries.

The southeastern part of the continent is the part best fitted for agriculture. The chief crops are wheat, barley, oats, Indian corn, arrowroot, potatoes, sugar-cane, tobacco and grapes. Gold mining, cattle raising and wool growing are among the principal occupations of the people.

There are five colonies, of which *Victoria* is the most populous. Melbourne is the capital of Victoria, and the largest city in Australia.

The colony of *New South Wales* is situated north of Victoria. It is the leading agricultural colony on the continent.

Sydney, the capital of New South Wales, is the oldest city in Australia.

TASMANIA, a British colony, is situated south of Australia. The soil is fertile, but covered by such dense forests, that the labor of preparing it for agriculture is very great.

Hobart Town is the capital.

NEW ZEALAND, a British colony, is east of Australia. The colony consists of a chain of islands, only three of which are of much importance. The chief productions are wool, flax, and the ordinary cereals.

Wellington is the capital.

North of Australia is a large number of islands, most of which belong to Holland and Spain. *Borneo* and *Celebes* are occupied mainly by native States, of which little is known. *Java* and *Sumatra* are under the control of Holland. They are noted for the large quantity of coffee which they produce annually.

Batavia, the capital of all the Dutch possessions in the East, is situated on the east end of the Island of Java. Its commerce is very extensive, the chief exports being coffee, sugar, tobacco, timber, gold dust, diamonds, camphor, bees' wax, tortoise shell, and spices.

Philippine Islands, next to Cuba, the most valuable possessions of Spain, are situated east of the southern part of Asia. They are noted chiefly for the spices and tropical fruits which they produce.

Manila, on the Island of Luzon, is the capital, and most populous city of the Philippines.

Sandwich Islands, a group of islands in the North Pacific Ocean, constitute the Kingdom of Hawaii.

The principal productions are sugar, wheat, cotton, tobacco, arrowroot and sweet potatoes.

The largest active volcano in the world is situated on one of the Sandwich Islands.

Honolulu is the capital and principal city.

PART III.

CHAPTER I.

DANISH AMERICA, BRITISH AMERICA, AND THE BASIN OF THE ST. LAWRENCE.

In the elementary work we learned that North America comprised the countries of Danish America, British America, the United States, Mexico, Central America, and the West Indies.

We will begin at the northeast corner of the continent with Danish America which consists of Greenland and Iceland; both cold and inhospitable, and only a few of the hardiest grains and vegetables can be cultivated. The people are largely dependent on fishing for a livelihood.

Iceland is noted for its volcanoes and geysers. Its capital is Reikiavik.

The southern point of Greenland is Cape Farewell, in about latitude 60° N. The northern part of the island has never been explored on account of the vast fields of ice and snow. Smith's Sound, west of Greenland, is the favorite route of Arctic explorers in their efforts to reach the north pole. It was on the west side of this Sound that the "Greely party" was found and rescued in 1884. Greenland has a number of European settlements, but they are all feeble.

North of the mainland of British America we find a large number of islands which, by reason of their Arctic climate, are not of enough importance to entitle them to much attention. They may be of importance at some future time, if so, then will be the time to study them.

The Mackenzie River flows into the Arctic Ocean near the northwest corner of British America. Ascending the river, we notice Great Bear Lake sending in its waters from the east

Peace River comes in from the west, having forced its way through the Rocky Mts.

Great Slave Lake, of which the Mackenzie is the outlet, appears next.

Slave River flows from the south into the Great Slave Lake.

Athabasca Lake is the source of the Slave River

Athabasca River, the headwaters of the Mackenzie, rises in Mt. Brown, and flows northeast into Lake Athabasca.

Have the position of Mt. Brown firmly fixed, as it is one of the "landmarks" in the geography of North America. Sketch the Mackenzie and its branches.

Melville Peninsula is at the entrance into Hudson Bay.

Hudson Bay is crossed at its widest part by parallel 60° N.

Nelson River, the outlet of Winnipeg Lake, is deep and wide, but has so many rapids as to be scarcely fit for navigation.

Lake Winnipeg, an important lake, is situated mostly in the Province of Manitoba.

Red River of the North flows into Lake Winnipeg from the south. The basin of the Red River is the great wheat region of Manitoba.

Winnipeg, the capital of Manitoba, is situated near the mouth of the Red River.

Saskatchewan River rises near Mt. Brown; flows through the Northwest Territory into Lake Winnipeg.

James Bay, the southern arm of Hudson Bay. Nearly all of the rivers that empty into James Bay rise in the Height of Land.

Hudson Strait.

Labrador, a cold, dreary peninsula of British America, is inhabited only by Indians and missionaries. Notice that parallel 60° N. passes through the northern part of Labrador.

Strait of Belle Isle is the narrow channel separating the island of Newfoundland from Labrador.

Trinity Bay, a large bay in the southeastern part of Newfoundland.

Heart's Content, a city on Trinity Bay, is the western terminus of several Atlantic cables.

St. John's, the capital of Newfoundland.

Cape Race. Cape Ray.

Grandbanks, southeast of Newfoundland, and famous for their cod fisheries.

Gulf of St. Lawrence.

St. Lawrence River, one of the greatest rivers of North America.

Orleans Island. Montmorency River flows into the St. Lawrence opposite Orleans Island. The river is noted for its beautiful falls.

Quebec, the most strongly fortified city in America, and the capital of the Province of Quebec, is situated on the St. Lawrence at the mouth of the St. Charles River. The fortifications are on the Heights of Abraham.

Point Levi is across the St. Lawrence from Quebec.

Lake St. Peter is an expansion of the St. Lawrence River.

Sorel River drains Lake Champlain.

Lake Champlain is a long, narrow body of water between Vermont and New York.

Winooski River flows into Lake Champlain.

Montpelier, the capital of Vermont, is on the Winooski.

Burlington, the largest city of Vermont, is situated on Lake Champlain, near the mouth of the Winooski River.

Rutland, noted for its marble quarries, is on a tributary of Lake Champlain.

Lake George, a beautiful lake of New York, discharges its waters into Lake Champlain. This lake has become a favorite summer resort.

Ticonderoga, at the mouth of the outlet of Lake George, is renowned for Old Fort Ticonderoga in its vicinity.

Montreal, the largest city of British America, is situated on the island of Montreal in the St. Lawrence River.

Ottawa River separates the Provinces of Quebec and Ontario.

Ottawa is the capital of the Dominion of Canada.

The *Thousand Isles* are situated in the St. Lawrence, near Lake Ontario. They are a fashionable summer resort.

Kingston, on the north side of Lake Ontario, is connected with Ottawa by the Rideau Canal.

Have the pupils sketch the St. Lawrence from Lake Ontario to its mouth; also Lakes Champlain and George.

Toronto, capital of the Province of Ontario, is engaged in the manufacture of railway cars, carriages, leather, and soap. It has several rolling-mills, breweries, and pork packing establishments. It is also noted for its university and normal school.

Niagara River, the outlet of Lake Erie, is noted for its wonderful falls. The Falls of Niagara are 165 feet high, and are divided by Goat Island.

Welland Canal, a ship canal, connects Lakes Ontario and Erie. It is on the British side of the river.

Lake Erie. Detroit River flows out of L. St. Clair into Lake Erie.

Detroit, the largest city of Michigan, has a large lake commerce, and is the center of an important railroad system. Continuing northward we find:

St. Clair Lake. St. Clair River.

Lake Huron. Georgian Bay.

Collingwood. Great Manitoulin Island.

St. Mary's River, the outlet of Lake Superior. In it are the Falls of St. Mary. A ship canal leads around the falls, on the American side.

Lake Superior is the largest body of fresh water on the globe. Its northern point is about in the latitude of Paris.

St. Louis River, flows into Lake Superior at its west end. This river is generally regarded by geographers as the headwaters of the St. Lawrence River.

We will now continue our journey southward, we find:

Duluth, a city of Minnesota, at the west end of Lake Superior; it is the eastern terminus of the Northern Pacific Railroad.

Marquette has rich iron mines. The famous copper regions lie between Marquette and the Apostle Islands.

St. Mary's River.

Mackinaw Strait connects Lakes Huron and Michigan. In it is the island of Mackinaw, which is rapidly becoming a favorite summer resort.

Lake Michigan is the only one of the Great Lakes which is entirely in the United States

Green Bay, an arm of Lake Michigan.

Green Bay City, at the head of Green Bay.

Fox River, the outlet of Lake Winnebago, flows into Green Bay.

Lake Winnebago is an expansion of the Fox River.

Oshkosh, an important city of Wisconsin, is situated on the west shore of Lake Winnebago. It is the great center of the Wisconsin lumber trade, and the seat of one of the State Normal Schools.

Milwaukee, the largest city of Wisconsin, is situated on the west shore of Lake Michigan, at the mouth of the Milwaukee River. The river has been made navigable to the heart of the city. The commerce of Milwaukee is great, wheat and flour being the chief items. The manufactures are very val-

uable; the principal products are lager-beer, pig-iron, iron-castings, machinery, agricultural implements, steam-boilers, car wheels, tobacco, cigars, etc., etc. Owing to the cream color of the brick of which the most of the buildings are made, the city is often spoken of as the "Cream City of the Lakes." The Germans constitute at least one-half the population.

Racine, a rapidly growing commercial and manufacturing town of Wisconsin.

Waukeegan, a city in the northeastern part of Illinois on Lake Michigan.

Chicago, the largest city of Illinois, and the fourth in the Union in size, is situated in the northeastern part of the State, on Lake Michigan. It is divided by the Chicago River into the North, South, and West Divisions.

The river and its branches have been deepened sufficiently to float the largest class of lake vessels, and now afford the city a water frontage of forty miles, besides the outer harbor on the lake front. They are spanned by thirty-six bridges and have two tunnels under them. These bridges are "swing bridges" or "draw bridges." The Rush Street bridge is probably the largest draw bridge in the world. It will accommodate four teams abreast, and is swung by steam power, and lighted by electricity. Connected with the South Branch is the Illinois and Michigan Canal which extends to the Illinois River at La Salle. This canal carries off much of the sewerage of Chicago, to the great annoyance of the towns through which it passes.

The city is supplied with good, pure water from Lake Michigan by means of tunnels which extend two miles out under the lake.

The public Parks of Chicago are eleven in number, and are situated in the outskirts of the city. They are to be connected by a system of Boulevards, fashioned after the famous Boule-

wards of Paris. The South Park in the South Side, and Lincoln Park on the North Side are the principal ones.

Chicago is the second commercial city of the Union. It is claimed that the entries of all kinds of water crafts at this port exceed in *number* those of Boston, New York, Philadelphia and New Orleans combined. More important lines of railroads center here than in any other city on the continent.

It is the third greatest manufacturing center of the United States. It has 3519 manufactories, which give employment to 79,414 persons. "Seven establishments employ over 1000 persons each, and three establishments over 4000 persons each."

Chicago is the greatest grain market in the world. It is also the most important market for live-stock and lumber in the United States; and it packs the most pork of any city in the world.

In October, 1871, Chicago was the scene of one of the greatest fires of modern times. The business portion of the South Division, and nearly all of the North Division were destroyed. The total area burned over, including streets, was nearly $3\frac{1}{3}$ square miles. The number of buildings destroyed was 17,450; persons rendered homeless, 98,500; persons killed, about 200; loss of property, \$190,000,000. The business of the city was interrupted but a short time, however. Population in 1880, 503,185.

Have your pupils imagine what a large city is. What makes some places grow so large? Will your town ever be a large city? Why? Why is Chicago larger than Milwaukee? Milwaukee larger than Detroit? etc.

We now go eastward:

South Bend is a very prosperous city of Indiana, on the St. Joseph River.

Grand Rapids, one of the flourishing cities of Michigan, is on the Grand River, at the head of steamboat navigation. The sawing and planing of lumber, manufacturing of furniture and

wooden ware of all sorts, farm implements, and flour are among the leading industries.

Lansing, the capital of Michigan, is situated on the Grand River.

Straits of Mackinaw.

Lake Huron. Saginaw Bay, an arm of Lake Huron.

Ypsilanti, the seat of the Michigan State Normal School, is situated on the Huron River.

Ann Arbor is the seat of the Michigan State University. The university is the leading school west of the Alleghany Mountains, and one of the best in the United States.

The State of Michigan is cut into two parts by the Strait of Mackinaw. The southern peninsula resembles a mitten with the opening towards Indiana.

The northern peninsula has rich mines of copper and iron; the southern peninsula has timber enough to furnish charcoal for the reduction of those ores.

South of parallel 44° , agriculture is the principal occupation of the people, while north of 44° , lumbering and mining are the leading employments. The pine forests of Michigan are very valuable.

The western part of Michigan, south of the Grand River, is becoming noted for the cultivation of the peach.

Toledo, one of the chief ports of Ohio, is situated on the Maumee River, eight miles from Lake Erie. The largest vessels on the lake can readily ascend to the city. It is the center of an important railroad system, which adds materially to its commerce; it is also an important manufacturing city, and has the largest wagon-works in America.

Fort Wayne, a railroad town, is at the head of the Maumee River.

Sandusky is situated on Lake Erie, at the mouth of the Sandusky River.

Cleveland, the second city in size and importance in Ohio, is on Lake Erie at the mouth of the Cuyahoga River, which

forms its harbor. The trade of the city, both by lakes and railroads, is great. Its most important manufactures are of iron and coal-oil. It is second only to Pittsburg in the refining of petroleum. The tomb of President Garfield is at Cleveland.

Erie, the principal lake city of Pennsylvania, is in the northwestern part of the State, on Lake Erie.

Chautauqua, a lake in the southwestern part of New York. It has become a summer resort on account of its great beauty, and the religious and literary "Assemblies" held upon its banks. Its waters find their way to the Alleghany River, and eventually to the Gulf of Mexico.

Buffalo, the third city in size in the State of New York, is situated at the east end of Lake Erie, and at the head of Niagara River. It is the western terminus of the Erie Canal, and the eastern terminus of lake navigation. It handles the most grain of any city in the world, most of which it transfers from the lake vessels to the canal boats by means of its immense grain elevators. Tell your pupils what a grain elevator is, that thousands of men are employed taking grain from the land carriers or railroads to the water carriers or boats. You can make this subject not only interesting but very profitable.

Rochester, a city of New York, at the Falls of the Genesee River, is noted for its flouring mills, manufacturing of boots and shoes, and for its nurseries.

Oswego, the largest city of New York on Lake Ontario, is an important commercial city.

Syracuse is specially noted for the manufacture of salt. How and from what is salt manufactured?

Cayuga, one of several beautiful lakes in the interior of New York.

Ithaca, at the south end of Lake Cayuga, is the seat of Cornell University.

We are ready to descend the St. Lawrence River, and as the places connected with it have already been studied, no

time need be given them now. Before passing to the Gulf of St. Lawrence, however, the lakes and their connecting links, as well as their tributaries, should be sketched, and the towns located. The pupils should be able to name rapidly, and in order, the States that are wholly or partially in the basin of the St. Lawrence. They should be required to name in order the bodies of water through which a vessel passes in going from Duluth to Buffalo; from Marquette to Cleveland; from Chicago to Montreal. Unless they can by this time see the basin of the St. Lawrence, with its lakes and tributaries, cities and harbors, spread out before them, the work has not been well done.

We now are on the Atlantic coast and find:

Prince Edward Island, one of the British Provinces; it is situated in the southern part of the Gulf of St. Lawrence. Agriculture and fishing occupy the time of the people.

Cape Breton Island is north of Nova Scotia, and belongs to that Province.

Nova Scotia, "New Scotland," is the southeastern Province of British America. Agriculture, mining and fishing are the leading occupations of the people.

Halifax is the capital and principal port of Nova Scotia. Its harbor is the principal outlet of British America during the winter months, when the St. Lawrence is ice-bound.

Cape Sable.

Bay of Fundy, an arm of the Atlantic Ocean, is noted for its high tides.

New Brunswick is a Province of British America, adjoining the State of Maine. It is extensively engaged in lumbering and ship building. Its fisheries are also valuable.

Fredericton, the capital of New Brunswick, is situated in the southwestern part of the Province on the St. John's River.

The northern and central parts of British America are valuable only for their furs, as the climate is too cold for agricul-

ture to be profitable. In a few of the southern provinces agriculture may be carried on advantageously and in the others somewhat so. The fisheries of British America are very valuable, and form one of its principal sources of wealth.

The Provinces, with their capitals, are as follows:

Newfoundland, St. John; Nova Scotia, Halifax; Prince Edward Island, Charlottetown; New Brunswick, Fredericton; Quebec, Quebec; Ontario, Toronto; Manitoba, Winnipeg; British Columbia, Victoria.

The Territories are:

Labrador, Northeast Territory, Northern Territory, Northwest Territory.

District of Kewaydin.

Each Province has its own Legislature, which makes its laws, and a Deputy-Governor, who executes them. In fact, each Province may be said to have entire self-government. All of the Provinces, except Newfoundland, have united in a general government, styled the Dominion of Canada. Ottawa is the capital of the Dominion. Here the Parliament meets, and the Governor-General has his residence. The Governor-General is appointed by England.



CHAPTER II.

THE NEW ENGLAND STATES.

The St. Croix River rises in Grand Lake and flows south between Maine and New Brunswick, into the Passamaquoddy Bay.

Mt. Desert, an island on the coast of Maine, is a favorite summer resort.

Penobscot Bay, an arm of the Atlantic.

Penobscot, a river of Maine, rises among the Green Mountains, near the frontier of Canada. It flows at first in an easterly direction, passing through Chesuncook Lake, and then southward to Penobscot Bay.

Bangor, the center of the lumber trade of Maine, is situated on the right bank of the Penobscot River. It is the head of navigation, and has a very extensive commerce.

Mt. Katahdin, the highest land in Maine, is east of Chesuncook Lake. Its height is 5,385 feet.

Rockland, noted for its lime and stone quarries, is situated on the west side of Penobscot Bay.

Kennebec, one of the chief rivers of Maine, rises in Moosehead Lake.

Bath, noted for its ship-building, is situated on the right bank of the Kennebec, twelve miles from the Ocean. "In the business of shipping, Bath is surpassed by no city in the United States."

The *Androscoggin River* drains Lake Umbagog, and flows into the Kennebec five miles above Bath.

Brunswick is the seat of Bowdoin College.

Lewiston, the third city of Maine in population, is situated on the left bank of the Androscoggin. The river here falls

about sixty feet, and affords an abundant water-power, which is utilized in manufacturing various kinds of goods, chiefly cotton and woolen. About 40,000,000 yards of cotton and woolen goods are manufactured here annually.

Augusta, the capital of Maine, is situated on the west bank of the Kennebec.

Portland, the most populous city of Maine, and its chief seaport, is situated on Casco Bay. The city has a very large commerce, both by the ocean and the many railroads which connect it with various important points in the interior.

Biddeford is situated on the right bank of the Saco River. Its prosperity is due mainly to trade, and the manufacture of cotton and woolen goods.

Maine is the largest of the New England States and the one best suited for farming. The ordinary grains, fruits, and vegetables are cultivated in the southern part of the State, while the northern part contains magnificent forests of pine, which furnish employment to a large number of persons.

The water-power of the State is very valuable, and is utilized in manufacturing cotton and woolen goods, lumber, and various other articles.

Portsmouth, the only seaport of New Hampshire, is situated on the right bank of the Piscataqua River, about three miles from the ocean. The city has an extensive commerce. The United States navy yard is at Kittery, on an island near the east side of the river.

The *Piscataqua River* is an estuary which partly separates New Hampshire from Maine. It receives several small rivers, the principal one of which is Salmon Falls River, on the boundary.

Merrimac River flows south into Massachusetts, and then northeast to the Atlantic. It is said to turn the most spindles of any river in the world.

Lawrence, noted for its many large cotton mills, is situated on both banks of the Merrimac River.

Lowell, the chief cotton-manufacturing city of the United States, is situated on the Merrimac, at the mouth of the Concord River. Lowell has also manufactures of machinery, boilers, paper, chemicals, edge-tools, elastic goods, files, screws, bolts, patent medicines, carriages, hydraulic presses, and machinists' tools.

Concord, the scene of the first battle of the American Revolution, is situated on the Concord River.

Lexington, situated a few miles southeast of Concord, is also of historical importance.

Nashua, an important manufacturing city of New Hampshire, is on the right bank of the Merrimac River, at the mouth of Nashua River.

Manchester, the most populous city of New Hampshire, is on the left bank of the Merrimac. "The river, which here falls 54 feet, affords great hydraulic power, which is employed in extensive manufactures of cotton and woolen goods." The city has also manufactures of steam-engines, locomotives, linen goods, hosiery, paper, etc.

Concord, the capital of New Hampshire, has abundant water-power, and is extensively engaged in the manufacture of cotton goods, woolen goods, carriages, machinery, etc.

Lake Winnepesaukee, "the smile of the Great Spirit," is a beautiful sheet of water, and is visited by many tourists every summer.

Mt. Washington, one of the White Mountains, and "the crown of New England," is the highest land east of the Mississippi, with the exception of Black Dome, in North Carolina. It is ascended by thousands of tourists annually. The ascent may be made on horseback, or by railroad.

"To accompany an aeronaut, to look out upon the surrounding world, has been the desire of many, though enjoyed by few. Here the 'iron horse,' guided by the hand of genius, climbs triumphantly to the dizzy height of 6,285 feet, more

than a mile in the air, where the 'storm-king' riding on the wings of the whirlwind, has hitherto reigned supreme; and yet all this is done in absolute safety, and with as much ease as the same distance could be accomplished over any road in the country.

"The ascent should be made the subject of some preparation. To attempt it improperly clothed would risk the pleasure of the excursion. You *may* not meet a snow storm, or find icicles hanging from the roof in the morning; but you are *liable* to any month in the year.

"The views while ascending and descending are supremely grand. To stand upon the summit of Mount Washington is the one desire of every visitor to the mountain region. Here from the highest point on the Atlantic Slope, he can look down upon this vast panorama of hills and valleys, cities and plains, dotted with a thousand silvery lakes blended into one harmonious whole. Without putting foot upon the ground he is lifted step by step up this rugged steep, to the very doors of the hotel, which, bound with chains to the barren cliff, has been built and furnished to receive him."*

Sketch the Merrimac River.

Newburyport is on the right bank of the Merrimac, three miles from the Ocean. It has extensive manufactures of cotton goods, machinery, and boots and shoes. "In the vicinity are deposits rich in silver, with lead and gold."

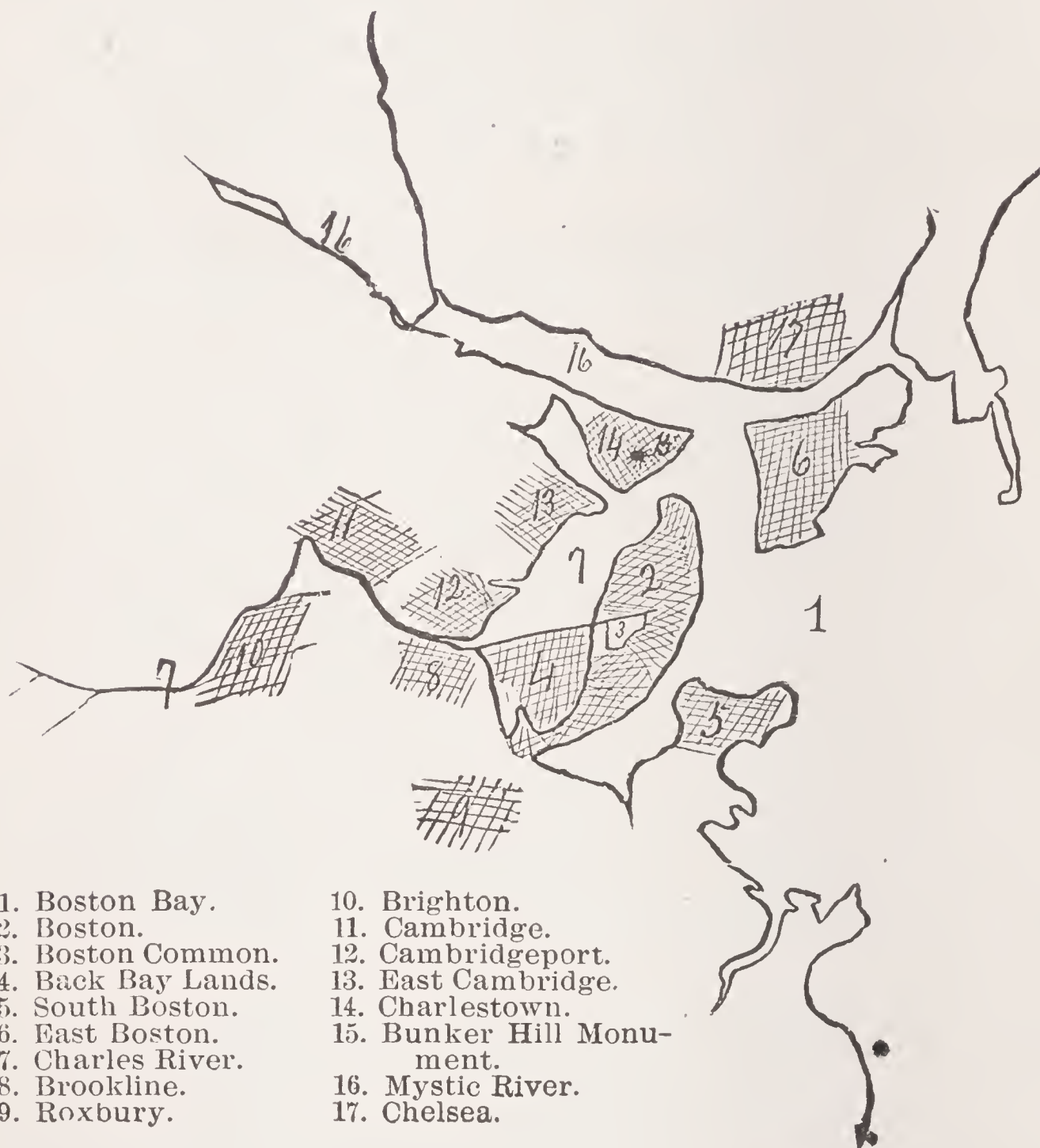
Cape Ann is on the east coast of Massachusetts.

Salem, on the coast, fourteen miles northeast of Boston, is an important manufacturing town.

Lynn, noted for the Manufacture of ladies' shoes, is on the coast, ten miles northeast of Boston.

Boston,† the capital of Massachusetts and the most populous city of New England, is situated on the western extremity of Massachusetts Bay. The city embraces Boston proper, East

*"Popular Resorts, and How to Reach Them." †See sketch next page.



1. Boston Bay.
2. Boston.
3. Boston Common.
4. Back Bay Lands.
5. South Boston.
6. East Boston.
7. Charles River.
8. Brookline.
9. Roxbury.

10. Brighton.
11. Cambridge.
12. Cambridgeport.
13. East Cambridge.
14. Charlestown.
15. Bunker Hill Monument.
16. Mystic River.
17. Chelsea.

Boston, South Boston, Roxbury, Dorchester, Charlestown, Brighton, and West Roxbury. The harbor is excellent, and the wharves, warehouses, and other shipping facilities are not surpassed. Steamers ply hence to Europe, and to the principal ports of the United States and Canada. The importation and refining of sugars is a valuable industry. "Pearl street is the largest boot and shoe market in the world."

Among the objects of interest to visitors, are Fanueil Hall, Boston Common, Bunker Hill Monument, and Harvard University, located at Cambridge.

Plymouth, the oldest town in Massachusetts, is of historical importance.

Cape Cod Bay. *Cape Cod* is a term usually applied to a long, narrow, sandy peninsula between Cape Cod Bay and the Atlantic.

Nantucket Island and *Martha's Vineyard* are important islands off the southeast coast of Massachusetts.

Elizabeth Isles are west of Martha's Vineyard.

Buzzard's Bay, an arm of the Atlantic Ocean.

New Bedford, noted for the fitting out of whaling-vessels, is situated on Buzzard's Bay.

Narragansett Bay extends into the State of Rhode Island.

Newport, a fashionable watering place and one of the capitals of Rhode Island, is situated on the west shore of the island of Rhode Island. The city has considerable commerce.

Fall River, an important manufacturing city of Southern Massachusetts, is situated on the east bank of the Taunton River, at its entrance into Mount Hope Bay. "Its prosperity is mainly derived from manufactures of cotton, nails, machinery, and other products; it being specially noted for its manufactories of cotton, of which there are 40 mills, with 1,284,700 spindles." The city has an important commerce.

Providence, one of the capitals (Why has Rhode Island two capitals? Does the legislature meet in both of them?) of Rhode

Island and its chief city, is situated at the head of navigation on Providence River. It is the second city of New England in population, wealth and importance. It is one of the great manufacturing centers of the country. The Gorham Company's manufactory of solid silverware, the leading silver manufactory of the world, is located here. The works of the Providence Tool Company cover over five acres of ground, and give employment to 1500 workmen. The other leading manufactures are stoves, steam-engines, locomotives, jewelry, cotton and woolen goods. "Providence is the headquarters of 60 woolen and 100 cotton manufactories." Brown University is located here.

Worcester, an important manufacturing city of Massachusetts, is situated on Blackstone River, near the center of the State. The city has important manufactures of a very great variety of articles, such as farm-implements, boots and shoes, woolens, cottons, all kinds of machinery. The wire mills are the most extensive in the world.

Sketch the coast of Massachusetts, and the State of Rhode Island.

New London is in southeastern Connecticut, on the Thames River. The citizens are largely interested in fisheries and the coast-trade. The manufactures of the city are of considerable importance.

Norwich is situated at the head of navigation, on the Thames River.

Long Island Sound separates Long Island from Connecticut.

Hartford, the capital of Connecticut, is situated on the right bank of the Connecticut River, fifty miles from Long Island Sound. This city has a large capital employed in the insurance business, and is the headquarters of a large number of both fire and life-insurance companies. Hartford has extensive manufactures of fire-arms, steam-engines, boilers, sewing-machines, hardware, silver-plated ware, carriages, etc., etc.

Springfield, a flourishing city of Massachusetts, is on the left bank of the Connecticut River. It is a very important manufacturing center. The United States Armory, situated here, is the most extensive in the Union.

Holyoke, has valuable manufactures of cotton goods and paper.

Mt. Tom is on the west bank and *Mt. Holyoke* on the east bank of the Connecticut. Mounts Tom and Holyoke are not noted for their altitude, but for the beautiful view of the Connecticut valley that may be had from their summits.

Amherst, near the Connecticut River, is the seat of Amherst College.

Keene, a beautiful city of southwestern New Hampshire, is situated on the Ashuelot River.

Hanover is the seat of Dartmouth College.

St. Johnsbury, noted for the manufacture of Fairbank's scales and balances, is situated in northeastern Vermont.

The Connecticut River rises in the northeastern corner of New Hampshire, 1,600 feet above the level of the sea, and flows southward to Long Island Sound. It is about 450 miles long, and in Connecticut has a width varying from 500 to 1000 feet.

Sketch New Hampshire.

New Haven, the most populous city of Connecticut, has about 800 manufacturing establishments, and is an important commercial center. It is the seat of Yale College.

Meriden is situated about midway between New Haven and Hartford. It has extensive manufactures of britannia-ware, silver-plated ware, and tin-ware.

The Housatonic River flows into Long Island Sound, a short distance west of New Haven.

Waterbury, a manufacturing city, is situated on a tributary of the Housatonic River. It has several rolling-mills, button-factories, and manufactories of clocks and silver plated ware.

It is stated that three-fifths of all the brass manufactured in the United States is made here.

Bridgeport, an important commercial center of Southwestern Connecticut, is on a small inlet of Long Island Sound.

Hoosac Mountains, an extension of the Green Mountains, are situated in the western part of Massachusetts. Hoosac tunnel, five miles long, passes through these mountains, in the northwestern part of the State.

The Green Mountains enter Vermont from the north in two ranges which unite near the the center of the State, and pass into Massachusetts. Mt. Mansfield, the highest land in the State, is in the western ridge.

Review what was learned about Vermont in connection with the basin of the St. Lawrence, and sketch the State.

Sketch Connecticut and Rhode Island. Sketch New England as a whole. *Use the chalk* FREELY.

Call attention to the rough surface of New England, its unfitness for profitable farming, except in a few favored localities, and its manufacturing advantages. Let the pupils show how these advantages have been used, by naming the chief manufacturing centers, with the principal articles made in each.

Make a scheme or brace for the New England States. It is a good plan to do this when reviewing any section or chapter.



CHAPTER III.

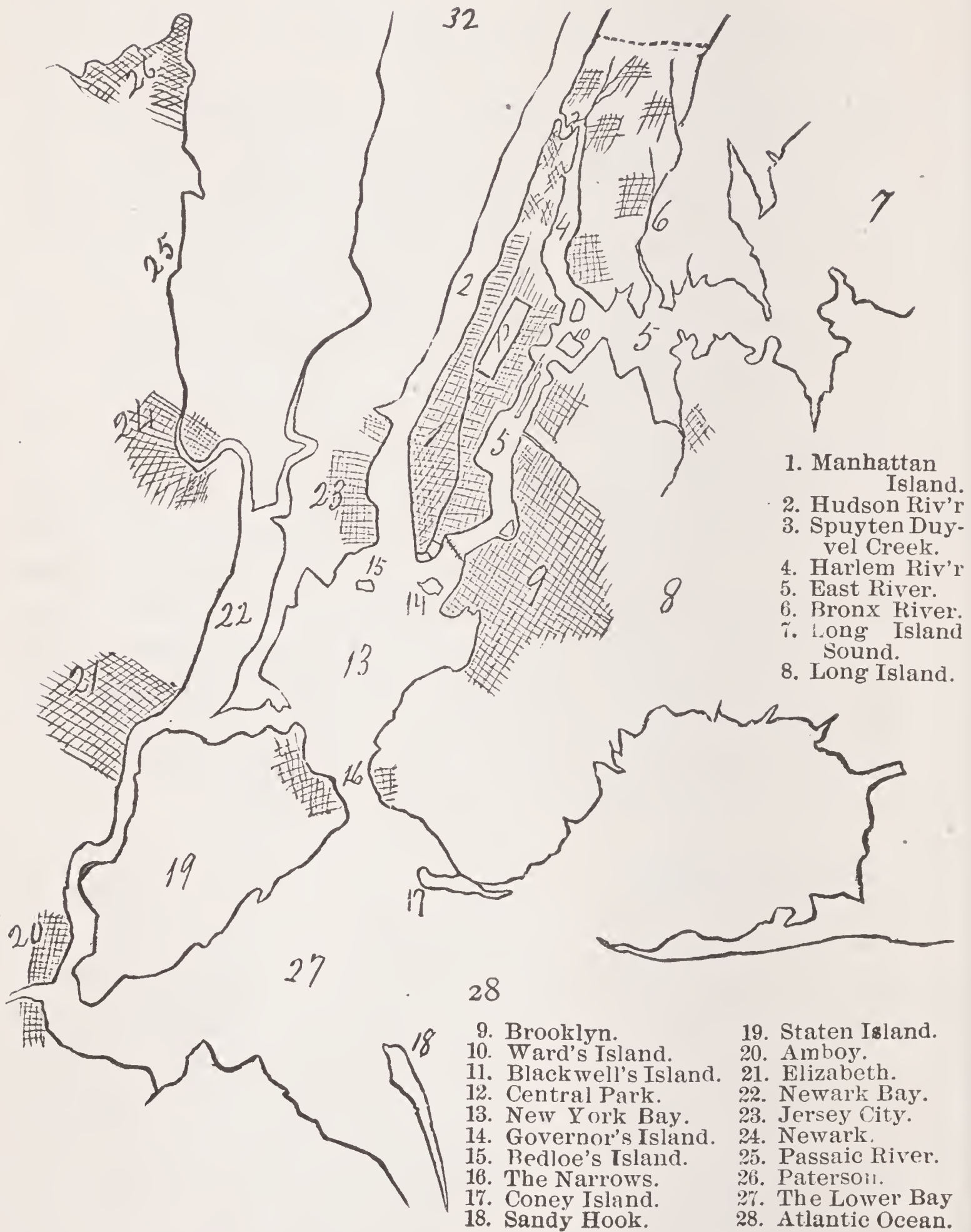
THE BASINS OF THE HUDSON AND DELAWARE RIVERS.

*New York and vicinity.** New York city, the largest city of the New World, is situated at the mouth of the Hudson River on New York Bay, in latitude $40\frac{3}{4}^{\circ}$ N. and longitude 74° W. It occupies all of Manhattan Island and a portion of the mainland on the north. The extreme length of the city is sixteen miles, and its greatest width from the Hudson to the Bronx River four and a half miles. Randall's, Ward's and Blackwell's Islands in the East River belong to the city, and are occupied by asylums and reformatories. Bedloe's and Governor's Islands in New York harbor belong to the United States. A garrison is stationed on Governor's Island, and Bartholdi's statue of liberty† is to be placed on Bedloe's Island.

The harbor of New York is one of the finest in the world. It is entered from the Atlantic by the Narrows, a strait a mile wide, which separates Long Island from Staten Island, and on the northeast the harbor is connected with Long Island Sound by the East River, a navigable channel.

*See sketch next page.

†The statue is a present from the people of France to the United States. "The pedestal will be of stone, rising in a massive square eighty-two feet above the ground. The solid block of concrete will be hidden under the grass, securely holding up the pedestal and the statue above. There will be stairways within the pedestal and balconies near the top commanding a fine view of the beautiful bay and the three cities. The figure itself, from the top of the head to the foot, on which it stands posed as if to step forward, is one hundred and ten feet and a half high; the forefinger is eight feet in circumference at the second joint; the head is fourteen feet high, and forty persons can stand within it. There will be a stairway within the statue, leading to the head, and another in the extended arm, by which ascent may be made into the torch, which will hold fifteen persons. A great light will be placed in the torch, and the pointed diadem, encircling the head, will be studded with electric lights."



Manhattan Island is thirteen and a half miles long, and varies in width from a few rods to two and a quarter miles. It is bounded on the north by Spuyten Duyvel Creek and Harlem River, on the east by the East River, which separates it from Long Island, on the south by the bay, on the west by the Hudson River, which separates it from New Jersey.

Central Park, situated on Manhattan Island, is two and a half miles long and half a mile wide, and contains 843 acres. No city can boast of a more beautiful park.

New York is supplied with water by an aqueduct from Croton River, a small tributary of the Hudson, forty miles north of the city.

The streets have been found insufficient to accommodate the business of the city, and recourse has been had to elevated railroads, of which there are several lines traversing the city from north to south. Broadway is the principal street; it will compare favorably with the best streets of Paris. Wall street is the financial heart of the country.

About 60 per cent. of the foreign commerce of the United States is carried on through the port of New York, the arrivals and departure of vessels being about 23,000 annually.

New York is probably the greatest manufacturing center in the world. Population, 1,500,000.

Brooklyn, the third city of the United States in population, is situated on the west end of Long Island, and separated from New York by the East River, which is crossed by the most magnificent bridge in the world. This bridge is the longest suspension bridge in the world, being 3,475 feet, or, including the approaches, 5,989 feet. Cost about \$15,500,000. Took thirteen years to build it. It has tracks for street cars, and for foot passengers, with a promenade above. The city is extensively engaged in both commerce and manufacturing. Pop. 600,000.

Jersey City, the most populous city of New Jersey, is separated from New York by the Hudson River, which is

here about a mile wide. The two cities are to be connected by a railroad tunnel, which is now in course of construction. Pop. 130,000.

If we regard these three cities, with their numerous suburbs, as one, which they are in reality, we shall have a city on New York Bay, next in population to London.

Sketch New York and vicinity.

In ascending the Hudson R. from New York city, we shall have the pleasure of seeing some of the most beautiful scenery on the continent. About fifty miles up the river we come to "the Highlands," at the entrance to which is

West Point, the seat of the United States Military Academy.

Poughkeepsie, on the east bank of the Hudson, is noted for the number of its educational institutions, of which Vassar College, for ladies only, is the principal one.

Albany, the capital of New York, is the eastern terminus of the Erie Canal, and is at the junction of several leading railroads, hence it has an extensive trade. It is also an important manufacturing center.

Troy, at the head of steamboat navigation on the Hudson, is actively engaged in manufacturing iron and iron ware of all sorts. It is noted, also, for the manufacture of shirts and collars.

Mohawk R., the principal tributary of the Hudson.

Rome is situated on the Mohawk R. and Erie Canal; it is also near the head waters of the Oswego R.

Saratoga Springs, "the Queen of American Watering-places," is situated north of the Mohawk, and twelve miles west of the Hudson. Its hotels, which are capable of accommodating 20,000 guests, are taxed to their utmost capacity in the month of August.

Fort Edward is near the great bend of the Hudson.

Sketch the Hudson.

From New York Harbor we pass westward into *Newark Bay*, a long, narrow body of water into which flow the Hackensack and Passaic Rivers.

Newark, a prosperous city of New Jersey, is situated on the Passaic River, about four miles from its mouth. It is noted for the manufacturing of carriages, castings, machinery, jewelry, leather, etc.

Paterson, on the Passaic, is noted for the number and variety of its manufacturing establishments. It has nearly forty silk factories, several iron foundries and machine shops, a number of establishments for the manufacturing of locomotives, cotton goods, woolens, velvets and carpets.

Elizabeth, the first settlement in New Jersey, is on the mainland, opposite the northwest corner of Staten Island.

Long Branch, a fashionable watering place, is on the east coast of New Jersey.

On account of its excellent beach, and its proximity to the two great cities of New York and Philadelphia, the eastern coast of New Jersey is becoming dotted with watering-places. The principal ones after Long Branch, are Ocean Grove, Atlantic City and Cape May City.

Cape May and *Cape Henlopen* are at the entrance to Delaware Bay.

Delaware is next to the smallest State in the Union. Its peach orchards are famous for their size and the excellence of their fruit. The common grains and fruits are profitably cultivated.

Dover, the capital of Delaware, is situated on Jones Creek. Population, 2,000.

Wilmington, the largest city of Delaware, is an important manufacturing center, and is especially noted for the manufacturing of iron steamboats, railroad cars, steam engines, machinery, powder, etc.

Philadelphia, "brotherly love," next to the largest city in the New World, and the metropolis of Pennsylvania, is situated on the Delaware and Schuylkill Rivers, six miles above their junction, and ninety-six miles from the Atlantic Ocean. The latitude of the city is about 40 degrees north, its length from

north to south is twenty-three miles, and its width varies from five to eight miles. It is an important commercial city, but its chief source of wealth are its manufactures. Textile fabrics, such as carpets, hosiery, silks, cottons, woolens, and mixed goods are the leading products. But, iron and steel, machinery, hardware, boots and shoes, chemicals, and brewery products are manufactured on a large scale.

Philadelphia has many beautiful parks and squares, but its great park is Fairmount Park, containing 2740 acres. It extends along both banks of the Schuylkill R. for more than seven miles, and along both banks of Wissahickon Creek for more than six miles. The Great Exposition of 1876 was held in this park. The reservoirs which supply the city with water, taken from the Schuylkill, are also here.

The city contains many buildings of interest, among which are Independence Hall, the United States Mint, Girard College and the University of Pennsylvania. Pop. 848,000.

Camden, a manufacturing center, is situated on the east bank of the Delaware, opposite Philadelphia.

Reading, noted for the manufacture of iron and steel, is situated on the Schuylkill.

Trenton, the capital of New Jersey, is on the Delaware R., a little above the great bend.

Easton, at the junction of the Lehigh and Delaware Rivers, is noted for its iron-furnaces, rolling-mills, machine-shops, etc. It is also a railroad center.

Mauch Chunk, the most picturesque town of the United States, is situated on the Lehigh River, in the center of the great anthracite coal-fields of Pennsylvania.

Delaware Water Gap, the famous gorge in the Blue Mts., through which the Delaware forces its way, is celebrated both in prose and poetry for its beautiful and sublime scenery.

Port Jervis, a city of New York, is situated on the Delaware R., at the junction of three States.

Delaware River rises among the Catskill Mts.

In sketching the Delaware, the pupils should be required to show all boundaries that touch it on either side. Probably at first they will place the northern boundary of New Jersey as far north as that of Pennsylvania. Have them sketch the State of New Jersey as a whole, showing each town in its proper position.



CHAPTER IV.

THE CHESAPEAKE BAY AND ITS TRIBUTARIES.

The *Chesapeake Bay* is a long, irregular arm of the Atlantic, dividing both Virginia and Maryland into two parts. On the north side of the entrance into the bay is Cape Charles, and on the south side, Cape Henry; both are in Virginia. The bay is famous for its oysters, terrapins and canvas-back ducks. Do you think there are large cities on its east shore, or any rivers of importance that flow in on that side? Why?

The *Chesapeake and Delaware Canal* crosses the peninsula from the head of Chesapeake Bay to the Delaware Bay, making a short and safe route for coasting vessels, canal boats, small steamers and barges, from the Chesapeake to Philadelphia. It is $13\frac{1}{2}$ miles long.

Susquehanna River rises among the Catskill Mountains, and flows southwest into Pennsylvania, in which State it makes several large bends, and finally flows southeast into the Chesapeake Bay.

York, an important town of Pennsylvania, is some distance west of the Susquehanna, in the midst of a fertile and populous farming region.

Harrisburg, the capital of Pennsylvania, is situated on the left bank of the Susquehanna. Its position near rich coal and iron mines has enabled it to enter extensively into manufacturing.

Juniata River is an important tributary of the Susquehanna. It rises among the Alleghany Mountains, and flows east, joining the Susquehanna as that river is about breaking through the Blue Ridge. It is known far and near for its beautiful scenery.

West Branch of the Susquehanna.

Wilkesbarre is situated in the valley of Wyoming. It manufactures locomotives, carriages, railroad cars, and pottery.

Scranton, a mining and manufacturing city, is in the midst of the great anthracite coal regions on the Lackawanna River. Between the Susquehanna and Delaware Rivers are situated the richest anthracite coal-fields of the world. Did you ever see any anthracite coal?

Elmira is situated in southern New York, on the Chemung River.

Binghamton, an important railroad town is in the southern part of New York, on the Susquehanna River.

Catskill Mountains.

Sketch the Susquehanna River, showing its tributaries and towns, and the State boundaries which it crosses.

Baltimore, the largest city of Maryland, is on the Patapsco River, fourteen miles from its mouth. Its trade and manufactures are important. Among its industries are ship-building, iron and copper works, woolen and cotton manufactures, sugar-refining, petroleum-refining, distilling, tanning, etc. It has the largest rolling mills in the United States, and is the chief point for working the rich copper ores of Lake Superior. The city is also noted for the canning of oysters.

Annapolis, the capital of Maryland and the seat of the United States Naval Academy, is on the Severn River.

Potomac River rises among the Alleghany Mountains, and flows southeast into the Chesapeake Bay. It separates Maryland from Virginia and West Virginia, and opposite its mouth is the boundary between Maryland and the "Eastern Counties" of Virginia.

Bull Run is a small stream that flows into the Occoquan River, one of the tributaries of the Potomac. It is of historical importance.

Mount Vernon, the home of Washington, is on the west bank of the Potomac R., fifteen miles below Washington City.

The mansion and tomb of Washington, with six acres of land, now belong to the women of America.

Alexandria, an important railroad town, is on the west bank of the Potomac.

Washington, the capital of the United States, is situated on the left bank of the Potomac, in the District of Columbia. It is 38 miles from Baltimore, 226 from New York, 763 from Chicago and 1,203 from New Orleans.

The Capitol, probably the most magnificent public building in the world, is situated near the center of the city. Most of the streets run due east and west, and north and south. Those running east and west are distinguished by letters,—the first street north of the Capitol being A Street North, the second B Street North, &c.; the first street south of the Capitol is A Street South, the second B Street South, &c. The streets running north and south are numbered,—the first street east of the Capitol being 1st Street East, and the first street west of the Capitol being 1st Street West, &c. In addition to these, there are several other streets or “Avenues” which radiate from certain centers towards all points of the compass; these are named after the States; the most important are those which radiate from the Capitol.

The President’s Mansion, (usually called the “White House,”) is on Pennsylvania Avenue, one-and-a-half miles northwest of the Capitol. The Smithsonian Institute, “for the increase and diffusion of knowledge among men,” is situated west of the Capitol. Still farther west is the Washington Monument, 555 feet high, the highest structure ever built by man. The Patent Office, in which are kept models of all machines invented in the country, is east of the White House.

Arlington Heights, once the home of Robert E. Lee, is across the Potomac from Washington. A part of the estate is set apart as a National Cemetery.

Frederick, noted for its foundries and tanneries, is situated in the valley of the Monocacy, in Maryland.

“Up from the meadows, rich with corn,
Clear in the cool September morn,

“The clustered spires of Frederick stand,
Green-walled by the hills of Maryland.”

Gettysburg, noted for the great battle in 1863, is in the southern part of Pennsylvania, on Rock Creek, whose waters reach the Potomac through the Monocacy.

Shenandoah R. rises in the western part of Virginia, and flows northeast into the Potomac, which it reaches in time to aid that river in forcing its way through the Blue Ridge. Its valley is the “garden of Virginia.”

Harper's Ferry, situated at the confluence of the Shenandoah and Potomac, was the scene of the “John Brown Raid.”

Winchester is in the Valley of the Shenandoah, at some distance from the river. Several battles were fought near it during the Civil War.

Staunton, an educational and manufacturing center, is near the head waters of the Shenandoah.

Cumberland is situated on the left bank of the Potomac, and marks the narrowest part of Maryland.

The *Branches* of the *Potomac* rise among the Alleghany Mts.

The surface of Maryland is low and level in the east, and very rough in the northwest.

Coal and iron are the principal minerals of the State; its abundance of coal enables it to engage profitably in manufacturing.

The most of the State is well suited for farming. Large crops of wheat, oats and Indian corn are raised; and it is one of the chief tobacco-producing States of the Union.

Sketch the Potomac River; also Maryland and Delaware. Going south we come to:

Rappahannock River; and ascending it we find

Fredericksburg, noted for its manufacturing facilities, and for the great battle of 1862.

Rapidan, a river of Virginia, rises on the southeastern slope of the Blue Ridge, and flows east into the Rappahannock. On the south side is the "Wilderness."

Yorktown, a town of historical importance, is on the right bank of the York River, about ten miles from its mouth.

Fortress Monroe, one of the principal fortifications in the United States, is situated on "Old Point Comfort," on the north bank of the James River, at its mouth.

James River, the principal river of Virginia, rises among the Appalachian Mountains, and flows southeast into the Chesapeake Bay.

Hampton Roads is an expansion of the James River, near its mouth.

Norfolk, the chief seaport of Virginia, is on the right bank of the Elizabeth River, a navigable inlet of Hampton Roads. The Elizabeth is nearly a mile wide, and navigable for vessels of the largest class. Norfolk is the chief naval station of the United States, and at Gosport, one of its suburbs, is situated one of the United States navy yards.

Williamsburg is between the James and York Rivers.

Chickahominy rises northwest of Richmond, flows southeast, then south into the James; it flows through extensive swamps.

Appomattox River flows east into the James River.

Petersburg, a prosperous manufacturing city, is situated on the south bank of the Appomattox. Small steamers ascend the river to this place. It was an important point during the Civil War.

Appomattox Court House is a village on the Appomattox River, near its source. Here General Lee surrendered his army to General Grant, April 9, 1865.

Richmond, the capital and largest city of Virginia, is on the north bank of the James River, about one hundred miles by

water from the Chesapeake Bay. The commerce of the city is great, the chief exports being tobacco and flour. Its manufacturing establishments include iron works, machine shops, foundries, sugar refineries, cigar factories, coach and wagon factories, etc. Richmond was the capital of the Southern Confederacy during the Civil War.

Lynchburg, noted for the manufacture of iron and iron ware, is situated on the James River, near the eastern base of the Blue Ridge.

The *Natural Bridge* spans Cedar Creek, a small tributary of the James, flowing in from the north. The Bridge is about two miles from the James.

Notice how close the headwaters of the James are to those of the Shenandoah.

Cape Henry.

Sketch the James River; also the Chesapeake Bay, showing the mouth of each of its tributaries.

The surface of Virginia may be divided into three parts—the tide water region, or lowland along the Chesapeake Bay, the highland at the base of the mountains, and the long valleys between the ranges of the Appalachian Mountains.

Corn and tobacco are the principal crops of the tide-water region; wheat, corn and oats of the highlands at the foot of the mountains, and wheat, corn and tobacco, of the valleys.

The mountains of Virginia contain rich deposits of coal and iron, which are being extensively mined.

Make scheme, and review.

CHAPTER V.

THE CAROLINAS, GEORGIA, FLORIDA, AND ALABAMA.

We now will go south, visiting along the coast, ascending the rivers, and seeing the cities.

Cape Hatteras is part of a long, narrow sand bank, separated from the mainland of North Carolina by Pamlico Sound.

Albemarle Sound, a large body of water in the eastern part of North Carolina, is separated from the Atlantic by a narrow sand bank. Small vessels can pass from the Sound to Chesapeake Bay through the Dismal Swamp Canal.

Dismal Swamp lies partly in Virginia, and partly in North Carolina. A large portion of it is covered with forests of cypress and cedar.

Roanoke, one of the principal rivers of North Carolina, is formed by the Dan and Staunton Rivers.

Roanoke Island is situated between Albemarle and Pamlico Sounds, and is of historical importance.

Pamlico Sound, a large body of salt water in the eastern part of North Carolina. It is separated from the Atlantic by sand banks; there are several inlets connecting it with the Ocean.

Neuse River flows into Pamlico Sound.

New Berne, noted for its exports of grain, lumber, tar and turpentine, is on the right bank of the Neuse, at the mouth of the Trent River.

Raleigh, the capital of North Carolina, is near the Neuse River.

Cape Fear.

Cape Fear River, the largest stream in North Carolina, is formed by the Deep and Haw Rivers.

Wilmington, the principal sea port and largest city of North Carolina, is on the Cape Fear River, about thirty miles from its mouth. The city has several rice mills and ten turpentine distilleries. Its chief exports are turpentine, tar, pitch, rosin, tobacco and cotton. It is the greatest market in the world for "naval stores." Population, 17,350.

Fayetteville, on the Cape Fear River, at the head of navigation, has considerable trade.

Yadkin River rises in the northwestern part of North Carolina, and flows south through South Carolina, in which State it is known as the Great Pedee River.

The surface of North Carolina is low in the east, rolling in the center, and very mountainous in the Western part. Black Dome, 6,707 feet high, is the highest point east of the Mississippi River.

Mica, zinc and gold are profitably mined in different parts of N. Carolina. Did you ever see any mica?

The State is especially noted for the products of its pine forests, its tobacco, corn and wheat

Sketch North Carolina.

Santee, the largest river of South Carolina, is formed by the Congaree and Wateree Rivers. The latter rises in N. Carolina, where it is known as the Catawba River.

Charlotte, a railroad center of N. Carolina, is a short distance east of the Catawba R.

Columbia, the capital of S. Carolina, is situated on the left bank of the Congaree R.

Charleston, the chief commercial city of S. Carolina, is situated about seven miles from the Atlantic, at the head of Charleston Harbor, on a narrow peninsula between the Ashley and Cooper Rivers. The entrance to the harbor is about a mile wide, and is defended by Fort Moultrie, on Sullivan's Island, and Fort Sumter, raised on a shoal in the harbor. A fine view of the city is obtained in entering the harbor from the sea; and, as it is built on low and level land, it seems to

rise from the water as we approach; whence it has been called the "American Venice."

The chief exports are cotton and rice.

Beaufort is on Port Royal River, about fourteen miles from the Atlantic.

Savannah is one of the largest rivers of the South.

Sketch the two Carolinas.

The surface of South Carolina is very low in the south and hilly in the north.

The principal crops are corn, cotton and rice. The many islands along the coast are noted for the "sea-island cotton."

Savannah, the principal sea-port of Georgia, is situated on the right bank of the Savannah River, about eighteen miles from its mouth. The city occupies a bluff about forty feet high, and extends along the river $2\frac{1}{2}$ miles.

It is one of the most handsome cities of the country; its broad streets and beautiful parks are noted for their semi-tropical trees and flowers. The principal export is cotton.

Augusta is on the right bank of the Savannah.

Altamaha River is formed by the union of the Oconee and Ocmulgee Rivers.

Milledgeville manufactures cotton and woolen goods.

Macon, an educational center, is situated on the Ocmulgee River, at the head of navigation.

St. Mary's River rises near the southern border of the Okefinokee Swamp. It forms the boundary, for the most of its course, between Georgia and Florida.

St. John's River rises in the southeastern part of Florida, flows north almost to the northern boundary of the State, then east to the Atlantic. It is from two to three miles wide at different places, and is navigable for 250 miles.

Jacksonville, a beautiful city of Florida, is on the left bank of the St. John's. It ships 45,000,000 oranges and 60,000,000 feet of yellow pine, annually.

St. Augustine, the oldest city in the United States, is on the coast.

Cape Sable is the southern point of the mainland of the United States.

Florida Keys, a chain of islands south of the peninsula of Florida.

Key West, the largest city of Florida, is situated on Thompson's Island, one of the Florida Keys. It has extensive manufactures of cigars, and valuable sponge-fisheries. Population, 9,890.

Everglades, a marshy region of Southern Florida. A large part of it is covered with water, which encloses hundreds of small islands, covered with dense thickets of oaks, cypress and palmetto. Many alligators and bears are found here.

Tampa Bay, an arm of the Gulf of Mexico.

Suwanee River.

"Way down on de Suwanee River," etc.

Appalachee Bay.

Tallahassee, the capital of Florida.

Appalachicola, a city of Southern Florida, is at the mouth of the Appalachian River.

Appalachiola River is formed by the union of the Flint and Chattahoochee Rivers, and flows into the Bay of Appalachiola.

Chattahoochee River, for much of its course, is on the boundary between Alabama and Georgia.

Atlanta, the capital and largest city of Georgia, is in the northern part of the State, seven miles southeast of the Chattahoochee. Atlanta is probably the most flourishing city in the Southern States. It has several iron foundries, machine shops, cotton factories, and manufactories of farming implements. It is also an important railroad center, and has an extensive commerce.

Georgia is one of the most prosperous of the Southern

States. The surface is low and level in the south, but in the north it is very hilly, and even mountainous.

Gold, coal, iron and marble are found in the mountains, and mined in considerable quantities.

The principal crops are cotton, corn and wheat.

Sketch Georgia and South Carolina.

Pensacola, an important town, is situated on Pensacola Bay. The United States has a navy yard a short distance below the city. The entrance to the harbor is defended by Fort Pickens, situated on the west end of Santa Rosa Island.

Sketch Florida, noticing carefully the shape of the northern boundary.

Florida is becoming famous for the cultivation of oranges, lemons, sugar-cane, pine-apples and bananas.

Yellow pine timber is very abundant in the State.

Mobile, the largest city and only seaport of Alabama, is situated on the west bank of the Mobile River, at its entrance into Mobile Bay. It is a commercial city, and exports large quantities of cotton, lumber and naval stores; coffee is one of the principal imports.

Mobile River is formed by the junction of the Tombigbee and Alabama Rivers.

Selma, an important manufacturing center, is on the right bank of the Alabama River.

Montgomery, the capital of Alabama, is situated on the left bank of the Alabama River. It has considerable commerce, as the Alabama is navigable for steamboats.

Alabama River is formed by the union of the Coosa and Tallapoosa Rivers.

Alabama is one of the principal cotton producing States. It has very extensive and valuable coal fields.

Sketch Alabama, Georgia, South Carolina and Florida.

CHAPTER VI.

THE LOWER MISSISSIPPI AND OHIO BASINS.

Pearl R. rises in Mississippi, and flows south into the Gulf of Mexico. Through the lower part of its course, it is on the boundary between Mississippi and Louisiana.

Jackson, the capital of Mississippi, is on the Pearl River.

Lake Pontchartrain. Lake Borgne.

Mississippi, the principal river of North America, rises in the northern part of Minnesota, in L. Itasca, and flows east of south into the Gulf of Mexico. The length of the river is 2,616 miles. But if we regard the Missouri R. as the true Upper Mississippi, its length from the source of Madison Fork, (the real source of the Missouri,) to the Gulf is 4,194 miles. On leaving L. Itasca, the Mississippi is ten or twelve feet wide, and fourteen inches deep; its average width from Cairo to the Gulf is 3,000 feet, and its maximum depth is about 125 feet. The range between high and low water at Cairo is 51 feet, and at New Orleans 14.4 feet. The river carries, annually, sedimentary matter enough to the Gulf to cover one square mile, to a depth of 241 feet. "The Mississippi boasts no fewer than 55 tributary streams, with a total length of navigation of 16,571 miles, or about two-thirds of the distance round the world. Even this, however, represents but a small amount of the navigation which follow when the Federal Government has made the contemplated improvements in the Upper Mississippi, in the Minnesota, Wisconsin, and other rivers in which it is now engaged. But while the Mississippi has 16,571 miles navigable to steamboats, it has 20,221 miles navigable to barges. This navigation is divided between 22 States and Territories. Louisiana, Arkansas, Mis-

Mississippi, Montana, Dakota and the Indian Territory, possess more miles of navigable stream than miles of railroad, all of which are open to everybody who wishes to engage in commerce." The Mississippi discharges its waters into the Gulf through several mouths, or "Passes", the entrances to all of which were obstructed by "bars," until Captain Eads constructed his famous "jetties." These are artificial embankments, built along both sides of the river, 1,000 feet apart, and extending into the Gulf $2\frac{1}{8}$ miles. They are in the "South Pass." These cost over \$5,000,000. "Who paid the bill?"

New Orleans, the largest city and commercial metropolis of the Southern States, is situated on the left bank of the Mississippi R., about 110 miles from its mouth. It is built on land gently descending from the river towards a marshy tract of land in the rear, and from two to four feet below the level of the river at high-water mark. An overflow is prevented by an embankment of earth called the levee. New Orleans is the chief cotton and sugar market in the Union. It also exports large quantities of tobacco, flour and pork. Not unfrequently from 1,000 to 1,500 steamers and flat boats may be seen lying at the levee; and, except in the summer months, its wharves are thronged with hundreds of ships and sailing craft from all quarters of the globe. Pop. 216,000. The next largest City in the southern or Gulf States is Charleston, with 50,000. Notice the comparison.

Baton Rouge, the capital of Louisiana, is on the east bank of the Mississippi.

Red River, the most southern of the great tributaries of the Mississippi, rises in the Staked Plain, near the eastern border of New Mexico, and flows southeast, forming the boundary between Indian Territory and Texas; and, for a short distance, between Texas and Arkansas. Opposite its mouth is the boundary between Louisiana and Mississippi.

Shreveport, a flourishing city of Northwestern Louisiana, is situated on the Red River.

Louisiana is the greatest sugar-producing State in the Union. Cotton, corn and tobacco are the other principal crops.

Natchez is noted for the shipping of cotton.

Vicksburg, the chief commercial port between Memphis and New Orleans, is built on uneven and elevated ground. Its principal business is in cotton, and the cotton trade. It is noted for the siege it sustained in 1863.

Yazoo R. enters the Mississippi from the northeast, a short distance above Vicksburg.

Mississippi produces the most cotton of any State in the Union. Corn and tobacco are the other principal crops.

Arkansas R. rises near the center of Colorado and flows southeast through Kansas, Indian Territory and Arkansas, into the Mississippi.

Little Rock, the capital of Arkansas is on the Arkansas R., near the central part of the State.

Hot Springs, a popular resort for invalids, is southwest of Little Rock, among the Ozark Mountains. There are about 100 springs, with temperature varying from 135° to 160° . A specially remarkable feature about them is that there are springs of very cold water and very hot ones so close that a person can sit with one hand in a hot spring and the other in a cold one.

Fort Smith is in the western part of Arkansas on the Arkansas R.

Tahlequah, the principal town in the Indian Territory, is in the eastern part of the Territory.

The Indian Territory is set apart by the Government of the United States for the use of the Indians. The Government furnishes them with means for tilling the soil, and pays practical farmers to teach them. Many of the tribes are quite civilized, and support churches and schools.

Each of the leading tribes or nations makes its own laws. Tahlequah being the capital of one of the principal nations is frequently given as the capital of the Territory.

No white man is permitted to own land in the Territory, unless he has an Indian wife.

Canadian R. is the largest southern tributary of the Arkansas River.

Leadville, noted for its rich silver mines, is situated in Central Colorado. Altitude about 9000 feet.

Helena, noted for the shipping of cotton, is in the eastern part of Arkansas, on the Mississippi.

The western part of Arkansas is hilly and rolling, owing to its being traversed by the Ozark Mountains.

Cotton, corn and tobacco are the chief productions of the State.

Sketch Arkansas, and show all boundaries that touch its borders.

Memphis, the principal city on the Mississippi between St. Louis and New Orleans, is in the southwestern part of Tennessee. Its cotton trade is very great, and constantly increasing.

Columbus is in the western part of Kentucky.

Ohio R.

Cairo, the most southern city of Illinois, is situated at the junction of the Ohio and Mississippi Rivers, which position gives it great commercial advantages. It is also quite a railroad center. The city is increasing rapidly in wealth and population.

Tennessee R.

Fort Henry is on the right bank of the Tennessee R., in the northern part of Tennessee.

Pittsburg Landing is a small village on the west bank of the Tennessee R., in the southern part of Tennessee. Near here was fought a great battle in 1862.

Notice that the Tennessee R. forms the boundary for a

short distance between Alabama and Mississippi. In ascending the river after our entrance into Alabama, we go east almost through that State to its eastern border, when we again enter the State of Tennessee, and come to

Chattanooga, an important railroad center, and a rapidly growing city. In its vicinity are Lookout Mountain, Missionary Ridge and Chickamauga Creek, all of historical note.

It will be well, occasionally, to make sketches of important neighborhoods. A sketch of Chattanooga and vicinity will be of interest.

Knoxville, the leading city of eastern Tennessee, is situated on the Holston River a branch of the Tennessee.

Cumberland R. flows into the Ohio near the mouth of the Tennessee.

Fort Donelson, of historic fame, is on the left bank of the Cumberland, in the northern part of Tennessee.

Nashville, the capital of Tennessee, is on the left bank of the Cumberland R. "It is noted as the educational center of the Southern States, and is distinguished for its enterprising spirit, literary taste, and polished society."

The surface of Tennessee is rough and broken in the east, and low and level in the west.

The principal crops are cotton, corn, wheat, oats and tobacco.

Shawneetown, a mining and manufacturing town, is on the Ohio, in the southeastern part of Illinois.

Wabash River forms the boundary between Illinois and Indiana for about 200 miles.

Little Wabash, flows into the Wabash from the northwest.

White R. flows in from the northeast.

Indianapolis, the capital and largest city of Indiana, is situated on the West Fork of the White River, 109 miles west of Cincinnati, and 195 miles east of south from Chicago. "It is the largest city in the United States not situated on navigable waters." Being the center of one of the greatest railroad systems in the United States, it has a very extensive commerce.

It is also noted for its rolling mills, foundries and machine shops, and for the great quantity of pork which it packs annually.

Vincennes is on the left bank of the Wabash.

Embarras, a river of Illinois, flows into the Wabash.

Charleston, a city of Southeastern Illinois, is situated near the Embarras.

Terre Haute, the seat of the Indiana State Normal School, is on the left bank of the Wabash R. It is an important railroad town.

Danville, an important mining and railroad town, is situated in the eastern part of Illinois, on a tributary of the Wabash.

La Fayette, on the Wabash, is noted for its manufactures of machinery, reapers and farming implements of various kinds.

Logansport, a noted shipping point for grain, lumber and pork, is situated on the Wabash.

Evansville, in the southwestern part of Indiana, on the Ohio R. is an important commercial and manufacturing city.

Green River flows into the Ohio from Kentucky, not far from Evansville. Near it is the famous Mammoth Cave.

Louisville, the chief city of Kentucky, is situated at the Falls of the Ohio. The Falls, which can be seen from the city, disappear almost entirely at times of high water, but when the water is low, steamboats have to pass around the Falls by means of a canal two and a half miles long. The commerce of Louisville is immense. It is one of the largest leaf-tobacco markets in the world, and one of the most important markets in the United States for live stock. Pork packing is carried on extensively, and its manufactures of iron, leather and farming implements are very valuable. It is the distributing point for the great quantities of whisky made in Kentucky.

New Albany is situated in Indiana, on the Ohio R., five miles below Louisville. There are many manufactories here.

Frankfort, the capital of Kentucky, is on the Kentucky River.

Lexington, a beautiful city of Kentucky, is situated in the famous blue-grass region. The surrounding country is noted for its choice cattle and horses.

Miami River flows into the Ohio R. on the boundary between Indiana and Ohio.

Dayton, noted for its manufactures of railroad cars, paper, stoves, cotton and woolen goods, is situated on the left bank of the Miami.

Cincinnati is the largest city of Ohio, and its commercial metropolis; it is situated on the Ohio R. On the opposite bank of the river are the cities of Covington and Newport, separated by the Licking River. Cincinnati has a river frontage of ten miles, and extends back about three miles. It is surrounded by hills from 400 to 500 feet high, forming one of the most beautiful amphitheaters in the country. The commerce of Cincinnati is very large, as its noble river and magnificent system of railroads give it access to all parts of the country. The city has over 5000 manufacturing establishments. "Iron, furniture, boots and shoes, beer and whisky, machinery and steamboats are the leading manufactures, but, pork packing is the principal industry."

Columbus, the capital of Ohio, is situated near the center of the State, on the Scioto River. It is noted for its railroads and manufactories.

Big Sandy R. is on the boundary between Kentucky and West Virginia. Notice the shape of the Ohio River at this point.

Sketch Kentucky and Tennessee, and enough of Alabama to show all of the Tennessee River.

Several ranges of the Appalachian Mountains pass through the eastern and southeastern parts of Kentucky, hence these parts of the State are very rough and broken; the remainder is level, or slightly rolling.

Charleston, an important city of West Virginia, is situated on the Great Kanawha River, at the mouth of the Elk River. It is in the center of a rich coal and salt producing region.

Parkersburg, noted for its extensive trade in petroleum, is on the Ohio River, at the mouth of the Little Kanawha River. The basin of this river is the principal oil region of West Virginia. The Ohio is spanned at Parkersburg by a railroad bridge one and one-third miles long.

Marietta, the oldest city in Ohio, is on the right bank of the Ohio River, at the mouth of the Muskingum R. Here are found numerous earthworks of the ancient "mound-builders."

Zanesville, on the Muskingum R., is a prosperous manufacturing town. Steamers ascend the river to this point.

Wheeling, the capital and largest city of West Virginia, is in the northern part of the State, on the Ohio R. It is a manufacturing center, containing several blast furnaces, iron foundries and forges. It is especially noted for the manufacturing of nails, glassware, steam engines, paper and cigars. Notice the shape of the state at this point.

Pittsburg, the second city of Pennsylvania in size and importance, is at the junction of the Alleghany and Monongahela Rivers, which here form the Ohio. Its situation gives the city great advantages for commerce; so it has become the center of an extensive trade with the Western States. But, Pittsburg is especially noted for its manufactures of iron steel, copper and glass. About one-fourth of the iron produced in the United States is used by the rolling mills and manufacturing establishments of this one city. There are over fifty glass-manufacturing houses. It is also largely interested in the production of petroleum, and contains a large number of refineries. On the opposite bank of the Alleghany R. is the city of Alleghany (or Allegheny); and on the left bank of the Monongahela is Birmingham. Both are flourishing cities, and are connected with Pittsburg by several bridges.

Oil City is situated on the Alleghany R. at the mouth of Oil Creek. It is the center of the great oil region of Pennsylvania.

Sketch the Ohio River, showing the tributaries and cities studied in connection with it, and all State boundaries that touch the river.

CHAPTER VII.

THE UPPER MISSISSIPPI AND MISSOURI BASINS.

In ascending the Mississippi from Cairo we notice the Big Muddy R. coming in from Illinois.

Carbondale, near the Big Muddy, is the seat of the Southern Illinois Normal University.

Kaskaskia R. flows into the Mississippi about midway between the mouths of the Ohio and Illinois Rivers.

Chester, the seat of the Southern Illinois Penitentiary, is on the Mississippi R., at the mouth of the Kaskasia.

Kaskaskia is on the Kaskaskia R., a mile east of the Mississippi. The first settlement in Illinois was made by the French at Kaskaskia, about 1680.

Vandalia, formerly the capital of Illinois, is on the Kaskaskia.

Shelbyville is on the Kaskaskia (or Okaw) R.

St. Louis, the largest city in the basin of the Mississippi, is on the Mississippi R., twenty miles below the mouth of the Missouri. The commerce of the city is very large, the chief articles of receipt and shipment being bread stuffs, live stock, cotton, lead, hay, wool, hides, lumber and tobacco. But vast as are its commercial interests, the prosperity of St. Louis is chiefly due to its manufactures, in which it employs 50,000 persons.

East St. Louis, an important city of Southwestern Illinois, is on the Mississippi, opposite St. Louis, with which it is connected by one of the finest bridges in the world. The bridge is built in two stories; the lower one containing a double car-track, the upper one, carriage ways, horse car tracks and foot paths. After crossing the bridge into St. Louis, the trains pass

under a large part of the city, through a tunnel 4800 feet long. The bridge and tunnel cost \$10,000,000. At East St. Louis are situated the largest stock yards in the country.

Belleville, a noted mining and manufacturing town, is situated fifteen miles southeast of St. Louis.

Ascending the Missouri R. we notice

Jefferson City, the capital of Missouri.

Kansas City, the second city of Missouri in population and importance, is on the right bank of the Missouri, at the mouth of the Kansas R. It is sometimes called the "Gate City of the Southwest." Its position on the Missouri R. and at the center of an extensive railroad system assures it a large commerce. It is also an important manufacturing city.

Kansas R. is formed by the union of the Smoky Hill and Republican Rivers.

Lawrence, the seat of the University of Kansas, is on the right bank of the Kansas R.

Topeka, the capital of Kansas, is situated on both banks of the Kansas R.

Leavenworth, the largest city of Kansas, and an important commercial center, is on the Missouri R.

Atchison, an important railroad center, is in the northeastern part of Kansas on the Missouri R. Over eighty railroad trains arrive and depart daily.

St. Joseph, the third city of Missouri, in size, is in the western part of the State.

Platte River.

Lincoln, the capital of Nebraska, is on Salt R.

North Fork of the Platte rises in North Park.

South Fork of the Platte rises in the South Park, and flows northeast to join the North Fork.

Cheyenne City, the capital of Wyoming Territory, is situated nearly due west from the union of the two Forks of the Platte. It is in the southeastern part of the Territory.

Denver, the capital and largest city of Colorado, is on the South Fork of the Platte, at an elevation of 5196 feet, and 922 miles west of St. Louis. It is the center of rich gold and silver mining districts, and is rapidly becoming one of the great commercial cities of the Union.

Pike's Peak, 14,347 feet high, is situated nearly south of Denver, at the entrance to the South Park.

Notice that the head waters of the South Platte are close to those of the Arkansas River.

Omaha, the largest city of Nebraska, is the terminus of over a dozen railroads from the east and south, which connect here with the Union Pacific. A costly bridge connects the city with Council Bluffs. Omaha is an important commercial and manufacturing center.

Council Bluffs, the principal city of Western Iowa, is on the Missouri R. It is a very important railroad center.

Big Sioux R. is on the boundary between Iowa and Dakota.

Yankton, the most populous city of Dakota, is in the southeastern part of the Territory, on the Missouri R.

Deadwood, a famous mining town, is situated in the southwestern part of Dakota, among the Black Hills, and between the forks of the Cheyenne R. The surrounding country is famous for its rich deposits of gold.

Bismarck, the capital of Dakota, is on the left bank of the Missouri R. The Northern Pacific Railroad crosses the river at this point.

Dakota is fast becoming one of the great wheat fields of the world.

Yellowstone R. rises near Union Peak, in latitude 44° N. and longitude 110° W., and flows northward through the National Park, and then northeast into the Missouri. Its principal tributary is the Big Horn River.

Yellowstone National Park is a tract of country sixty-five miles from north to south, and fifty-five miles from east to

west, set apart by Congress for a great national park. It is mostly in the northwestern corner of Wyoming, but includes a small portion of Montana. "It certainly possesses striking characteristics for the purpose to which it has been devoted, exhibiting the grand and magnificent in its snow-capped mountains and dark cañons, the picturesque in its splendid water-falls and strangely formed rocks, the beautiful in the sylvan shore of its noble lake, and the phenomenal in its geysers, hot springs, and mountains of sulphur. It may be claimed that in no other portion of the globe are there united so many surprising features—none where the conditions of beauty and contrast are so calculated to delight the artist, or where the phenomena are so abundant for the entertainment and instruction of the student. * * *.

"The Yellowstone Lake lies near the southeasterly corner of the park, the Yellowstone River flowing from its upper boundary, and running almost due north. The lake is twenty-two miles in length, and its average width from ten to fifteen miles. Its height above the level of the sea is seven thousand feet, while its basin is surrounded by mountains reaching an altitude of over ten thousand feet, the peaks of which are covered with perpetual snow. Numerous hot springs are found on the shores of the lake, and also along the banks of the river. About fifteen miles from the lake, the river takes two distinct precipitous leaps, known as the Upper and Lower Falls, and beyond the Falls cuts its way through an immense cañon, the vertical walls of which reach, at places, the height of fifteen hundred feet. Near the western boundary of the park, the Madison R. takes its rise, and along one of the branches of this river, known as Fire-Hole River, are found numerous extraordinary geysers, some of which throw volumes of boiling water to a height exceeding two hundred feet."*

The National Park is the greatest geyser region in the world.

*Picturesque America.

Helena, the capital of Montana, is situated near the Rocky Mountains, about 14 miles west of the Missouri.

Missouri River is formed by the confluence of the Jefferson, Gallatin and Madison Rivers. The source of the Madison is 8,301 feet above the level of the sea, and about two miles from the headwaters of the Snake, or Lewis River.

Montana is noted for its great herds of cattle, and for its mines of the precious metals.

Sketch the Missouri River, being careful to show all State and Territorial boundaries which touch its banks.

Returning to the Mississippi River, we find

Alton, an important city of Southwestern Illinois.

Illinois River, the principal river of Illinois, flows into the Mississippi River, about eighteen miles above Alton.

Beardstown is on the Illinois, a short distance below the mouth of the Sangamon River.

Sangamon River, an eastern tributary of the Illinois.

Lincoln, the seat of the State institution for feeble-minded children, is near Salt Creek, a northern tributary of the Sangamon.

Bloomington, an important railroad and educational center, is also noted for its fruit nurseries. Near it is Normal, the seat of the Illinois State Normal University.

Springfield, the capital of Illinois, is four miles south of the Sangamon River. It is an important mining and manufacturing center. Here is the Lincoln National Monument, which is visited by thousands of persons annually.

Decatur, an important mining and manufacturing city, is the center of an extensive railroad system.

Pekin, on the left bank of the Illinois River, is noted for its distilleries.

Peoria, the second city of Illinois, in population and importance, is on the right bank of the Illinois, at the foot of Peoria Lake. This city has a large commerce, as many railroads meet here; it is also noted for its manufactures, especially for the great quantity of whisky which it distills annually.

La Salle, an important mining town, on the Illinois River, is the western terminus of the Illinois and Michigan Canal, which extends from here to Chicago.

Vermilion River, a southern tributary of the Illinois.

Streator, an important coal-mining town, and *Pontiac*, the seat of the State Reform School for boys, are on the Vermilion.

Ottawa is on the Illinois, at the mouth of the Fox River.

Aurora, an important railroad town, is situated on the Fox River.

Elgin, noted for its manufacture of watches, is on the Fox River. Here is also the Northern Illinois Insane Asylum. Elgin is the center of a large district, famous for its dairy products.

The Eastern Illinois Insane Asylum is at Kankakee.

Joliet, the seat of the Illinois State Penitentiary, is on the Des Plaines River; it is also noted for its extensive stone quarries.

Sketch the Illinois River.

Hannibal, an important railroad town, is on the Mississippi River.

Quincy, the third city of Illinois in size and importance, is noted for its railroads, manufactures and commerce.

Warsaw, an important railroad town, is also on the Mississippi.

Des Moines River helps form the boundary between Iowa and Missouri, upon it is located

Des Moines, the capital of Iowa. The city is well supplied with water power, and has extensive manufactures of farming implements, steam-engines and boilers, railroad cars, and carriages.

Keokuk, in Southeastern Iowa, is on the Mississippi River, at the foot of the Lower Rapids.

Burlington, a flourishing city of Eastern Iowa, is an important railroad center, and extensively engaged in the manufacture of machinery, farming implements, flour, railroad cars, and

carriages. It is connected with East Burlington, by a railroad bridge. *Iowa River*.

Cedar Rapids is a town on the Cedar River, and is noted for its manufacture of farming implements.

Iowa City is the seat of the Iowa State University.

Rock River rises in the northeastern part of Wisconsin, and flows southwest into the Mississippi.

Upon its banks and tributaries are *Sterling*, extensively engaged in the manufacture of farming implements, flour, school furniture, carriages, and burial cases. It has, also, several foundries and machine shops.

Dixon, noted for the manufacture of flour and farming implements.

Belvidere, noted for the manufacture of cheese and farming implements, is in Northern Illinois, on an eastern branch of the Rock, also

Rockford, largely engaged in the manufacture of reapers, cultivators, pumps and carriages, is on Rock River. It has several paper-mills, foundries, machine shops, breweries, and a watch factory.

Freeport is on the Pecatonica, a western tributary of the Rock.

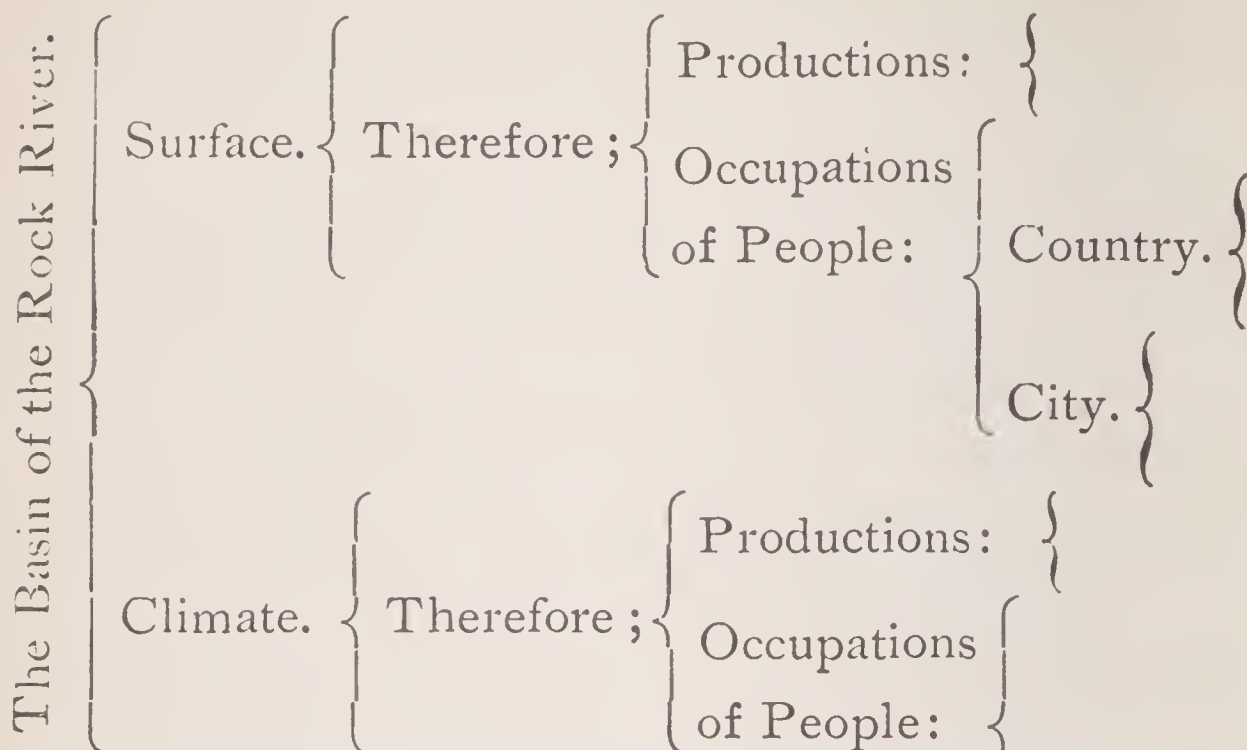
Beloit, an important city of Southern Wisconsin, actively engaged in the manufacture of farming implements and paper.

Janesville, a flourishing city of Wisconsin, contains a large cotton-factory, two woolen factories, several flouring mills, foundries, and manufactories for reapers, carriages, and farming implements of various descriptions.

The pupils will notice that all cities on the Rock River are extensively engaged in the manufacture of farming implements. This is due to the fact that the river flows through a very rich, farming country, and furnishes excellent water power.

Sketch Rock River.

It is also well to "draw" pupils out as follows:



Madison, beautifully situated between two small lakes in the southern part of Wisconsin, is the capital of the State. It is a railroad and manufacturing center, and the seat of the Wisconsin State University.

We now come to the following towns on or near the Mississippi:

Rock Island, whose prosperity has been derived mainly from trade and manufactures. It has several flouring mills, saw mills, and manufactories of glass, stoves and farming tools.

Moline, a few miles above Rock Island, with which it is connected by a horse railway, is famous for its manufactures of farming implements, especially plows.

Davenport, is at the foot of the Upper Rapids, opposite the city of Rock Island, with which it is connected by a magnificent iron bridge, built in two stories. The city has large manufactories of farming implements, woolen goods, carriages, furniture, and lumber.

Rock Island is between Davenport and Rock Island City. It belongs to the United States, and has a United States Arsenal on it.

Clinton, a railroad and manufacturing city.

Galena, noted for its lead mines, is on the Fevre River, six miles from its entrance into the Mississippi.

Dubuque, the principal business center of the lead region of the Northwest. The city has an extensive commerce, and is largely engaged in manufactures.

East Dubuque (formerly Dunleith), is in the northwest corner of Illinois, opposite the city of Dubuque, with which it is connected by an iron bridge.

The State of Illinois extends from latitude 37° N. to latitude $42\frac{1}{2}^{\circ}$ N. Its length is about 380 miles, and its greatest width 215 miles. It contains an area of 56,650 square miles, and a population of about 3,250,000, and is divided into 102 counties.

The surface of the State is level, there being but very little land that cannot be cultivated profitably.

Illinois leads all of the States in the production of corn, and ranks among the leading States in the production of wheat, oats and barley.

Lead and coal are the principal minerals. The first of these is found in the northwestern part of the State, while the second is found in nearly all parts of the State, south of Ottawa. To this abundance of fuel is largely due the prominent position the State has taken among the manufacturing States of the country.

It has the most miles of railroad of any State in the Union. Ten magnificent railroad bridges cross the Mississippi from Illinois, and connect it with the States west of the river.

Its network of railroads, and the two noble rivers that wash its borders, together with Lake Michigan, have enabled it to become one of the chief commercial States of the nation.

Sketch the State of Illinois.

Wisconsin River rises in the northern part of the State of Wisconsin, and flows southwest into the Mississippi River, about four miles below Prairie du Chien. "Steamboats ascend it to Portage City, from which they can pass through a short canal into Fox River."

We find the following cities on the Mississippi and its tributaries:

La Crosse, an important railroad and manufacturing city of Wisconsin

Winona, a manufacturing city of Minnesota, has several flouring mills, saw-mills, foundries, carriage factories, and manufactures of barrels, and farming implements. One of the Minnesota State Normal Schools is here.

Eau Claire, the chief commercial city of Northwestern Wisconsin, on the Chippewa River, manufactures about 300,000,000 feet of lumber annually.

Lake Pepin, is an expansion of the Mississippi.

St. Croix River, a northern tributary of the Mississippi, is on the boundary between Wisconsin and Minnesota.

St. Paul, the capital of Minnesota, is about 409 miles by rail, northwest of Chicago.

St. Paul is situated at the head of navigation, on the Mississippi, and has a very large commerce both by the river, and by its extensive system of railroads. It has manufactures of machinery, farming implements, furniture and carriages.

Minnesota River rises near the source of the Red River of the North, and empties into the Mississippi a short distance above St. Paul.

Minnehaha River, the outlet of Lake Minnetonka, flows into the Mississippi River near the mouth of the Minnesota. Both river and lake are noted for their beautiful scenery.

Minneapolis, the "Flour City," is on both banks of the Mississippi, at the Falls of St. Anthony. The city has an immense water-power, which it utilizes in manufacturing various kinds of goods, especially flour. Here are situated the largest flouring mills of the world, and they are kept at work both day and night.

St. Cloud, a manufacturing city of northern Minnesota, is on the right bank of the Mississippi.

Lake Itasca, the source of the Mississippi River.

Sketch the Mississippi to the Missouri River. By way of review make your outline quite full.

CHAPTER VIII.

TEXAS, NEW MEXICO, AND THE PACIFIC SLOPE.

Returning to the Gulf of Mexico, we find the State of Texas, look at the rivers and see the direction in which they flow. Beginning at the northeast, we find the *Sabine River* on the boundary between Louisiana and Texas. Continuing along the coast we reach

Galveston, the largest city and chief seaport of Texas, situated on the east end of Galveston Island. This is one of the most prosperous ports on the Gulf of Mexico. Its principal exports are cotton, hides, grain, and pork.

Dallas, an important city of Texas, is situated on Trinity River.

Austin, the capital of Texas, on the Colorado River. Steamboats ascend the river to this point during high water.

San Antonio, the second city of Texas in population, is surrounded by a fertile country and has considerable trade. The "Alamo" was at this point.

The *Rio Grande* rises in Southwestern Colorado, flows southeast through the San Luis Park, south through New Mexico, and southeast on the boundary between Texas and Mexico, reaching the Gulf of Mexico in latitude 26° N. Its length is estimated at 1800 miles, but the volume of water which it discharges is small, as it is generally a shallow stream. Small steamboats can ascend it about 500 miles

Texas, the largest State in the Union, has an area of 274,356 square miles. It is mainly an agricultural and grazing State, and is especially noted for its great herds of cattle and flocks of sheep. The resources of Texas have been rapidly devel-

oped since the Civil War. It is destined to become one of the most important States of the Union.

Albuquerque, an important railroad town of New Mexico, is on the Rio Grande, in the central part of the Territory. It is also the center of an important wine-growing region.

Santa Fe, the capital and largest town of New Mexico, is situated about twenty miles east of the Rio Grande. It owes its prosperity largely to the rich silver mines in its vicinity.

A large portion of New Mexico has not sufficient rainfall to make agriculture profitable. But whenever the land is irrigated it yields large crops. The cultivation of the vine is carried on extensively in favored localities.

Since the introduction of railroads, the mineral resources of the Territory are being rapidly developed. Its silver mines are very rich. Grazing is also profitable along the mountain streams. Most of the houses are built of adobe, or sun-dried brick, which seem well suited for the dry, hot climate.

"The Mexican population of the Territory is very large; the Legislature is almost entirely Spanish-speaking, and, as the American members are mostly conversant with the language, it is practically the only one spoken in that body. English and Spanish are both legal languages. The laws and all public notices are printed in both tongues."

The *Colorado River* is formed in southern Utah by the union of the Grand and Green Rivers, flows southwest and south into the Gulf of California.

Gila River is an eastern tributary of the Colorado.

Tucson, formerly the capital of Arizona, is on the Southern Pacific Railroad, in the southern part of the Territory. Gold-dust, hides, and wool are its principal exports.

Prescott, the capital of Arizona is situated in a basin among the Pine Mountains. Gold and silver are found among the neighboring mountains. The city does a large business in lumber, wool, and bullion.

Nevada, the "Silver State," lies mostly in Fremont's Basin, but the southern portion is in the basin of the Colorado. The prosperity of the State is almost entirely dependent upon its mineral resources, as the surface is too rough and dry for profitable farming.

Carson City, the capital of Nevada, is situated in the western part of the State, at the eastern base of the "Sierras." It is a busy, enterprising, mining town. A United States mint is located here.

The *Grand Canon of the Colorado*. "The head of the Grand Canon is in the northern part of Arizona, and it runs out in the northwestern part, lying wholly within that Territory. Its general course is westerly, but it makes two great bends to the south.

"It is two hundred and seventeen and a half miles long, and the walls vary in height from four thousand to six thousand two hundred and thirty-three feet. It is cut through a series of levels of varying altitudes, the chasm being deepest, of course, where it passes through the highest. There are in the canon no perpendicular cliffs more than three thousand feet in height. At that elevation from the river, the sides slope back, and rise by a series of perpendicular cliffs and benches to the level of the surrounding country. In many places it is possible to find gorges or side canons, cutting down through the upper cliffs, by which it is possible, and in some instances easy, to approach to the edge of the wall which rises perpendicularly from the river. At three thousand feet above the river, the chasm is often but a few hundred feet wide. At the highest elevation mentioned, the distance across is generally from five to ten miles."*

Arizona is a dry, barren country unfit for agriculture except where irrigation may be resorted to. Mining and grazing are the chief occupations of the people.

*"Picturesque America."

The *Grand River* rises in Middle Park, Colorado. Its principal tributary from the south is the Gunnison River.

The *Green River* rises near Union Peak, in Western Wyoming, and flows south through Eastern Utah to unite with the Grand in forming the Colorado. Its headwaters are close to those of the Yellowstone and Snake Rivers.

The *Wahsatch Mountains* cross Utah from northeast to southwest. They separate the basin of the Green River from Fremont's Basin.

Great Salt Lake is in the northern part of Utah, in the northeast corner of Fremont's Basin. It is about 90 miles long, with a breadth varying from 20 to 35 miles. The surface is about 4,200 feet above the level of the sea. The lake has no outlet.

Salt Lake City, the capital and chief city of Utah, is situated near the east bank of Jordan River, about twelve miles southeast of the Great Salt Lake. It is a beautiful and prosperous city, and shows the thrift and industry of its inhabitants, who are mostly Mormons.

Utah has rich deposits of the precious metals, and its prosperity must largely depend on the development of its mineral resources.

Agriculture is successfully carried on in the valleys and plains, wherever they can be irrigated.

California, the second State of the Union in size, is situated on the Pacific Ocean and extends through nine and a half degrees of latitude. The climate is usually mild. The surface consists of a narrow strip of lowland along the coast, the Coast Range of mountains, a long valley extending nearly throughout the entire length of the State, and the Sierra Nevada Mountains on the east.

Mining, agriculture, lumbering, and the herding of sheep and cattle are the chief pursuits. "California produces more gold and quicksilver than any other region in the world."

Notwithstanding this fact, its wheat and wool are of more value to the State than all its mineral productions combined.

The southern part of the State is famous for its oranges, figs, olives, and wines.

San Diego, in the southwestern part of California, has an extensive trade in hides, whale oil, and wool.

Los Angeles is situated on a river of the same name, about nine miles from the Pacific. The surrounding country is noted for the production of oranges, lemons, figs, and wine. Wine and wool are the principal exports.

San Francisco, the chief city of California, and commercial metropolis of the Pacific coast, is at the north end of a peninsula which is thirty miles long, and at the city, six miles wide, and separates San Francisco Bay from the Pacific Ocean. The city stands on the east, or inner, slope of the peninsula, and at the base of some high hills. The commerce of San Francisco is very great, the chief articles of export being the precious metals, grain, and wool. The manufactures are important, including woolen and silk goods, watches, carriages, acids, castings of iron and brass, and silver-ware.

San Francisco Bay is connected with the Ocean by a narrow strait called the Golden Gate.

Oakland, a beautiful city, is situated on the east side of San Francisco Bay, near the city of San Francisco. It is an important manufacturing point.

San Joaquin River rises in the southern part of California in Tulare Lake. Its waters are used a great deal for irrigating purposes.

Merced River, an eastern tributary of the San Joaquin, rises among the Sierra Nevada Mountains, and flows through the famous Yosemite Valley which lies among the Sierras, nearly in the center of the State, from north to south, and a hundred and fifty miles almost due east from San Francisco. The usual route to the Valley leads through the "big trees of Mariposa."

Sacramento City, the capital of California, is situated on the east bank of the Sacramento River, at the mouth of the American Fork. The city possesses a large commerce, being at the head of navigation for large steamboats, and accessible for steamers and sailing vessels at all seasons of the year. It is the distributing point of supplies to the mining regions of Northern California.

Mt. Shasta, 14,442 feet in height, is at the north end of the Sacramento Valley

“The greater part of the farming land of California lies in the two large valleys of the Sacramento and the San Joaquin.”

Columbia River, the largest American river that enters the Pacific Ocean, rises in British Columbia, flows south to the northern boundary of Oregon, thence west to the Pacific, forming the boundary nearly throughout between Oregon and Washington Territory. The navigation of the river is obstructed by the Cascades and Dalles. The Columbia is famous for its salmon fisheries.

Portland, the most populous city of Oregon, is on the west bank of the Willamette River, twelve miles from the Columbia.

Salem, the capital of Oregon, is situated on the right bank of the Willamette River.

The *Willamette Valley* is the garden of Oregon.

Walla Walla is situated on a river of the same name, in the southeastern part of Washington Territory.

Snake, or Lewis River, the principal tributary of the Columbia, rises at Union Peak, near the headwaters of the Green and Yellowstone Rivers, and flows west and north, joining the Columbia in southeastern Washington.

Boise City, the capital of Idaho, is situated on Boise River, a tributary of the Snake.

Idaho Territory is rapidly developing as a mining and grazing country. Some valuable gold mines have recently been discovered among the Cour d'Alene Mountains.

The *Strait of Juan de Fuca* separates Vancouver's Island from Washington Territory.

Olympia, the capital of Washington Territory, is situated at the head of Puget Sound. It is a city of grand possibilities.

Sketch the Pacific Slope.

Alaska is situated in the northwestern corner of North America, and is separated from the rest of the United States by British America.

The climate is too cold to admit of profitable farming, or even cattle raising. The southern part of the Territory has some extensive forests, but the northern part is destitute of trees.

"To an impartial observer it would seem wicked to suggest emigration from any part of the United States to a land, the coast lines of which are characterized by snow, rain, and fog to such an extent as to almost entirely preclude the ripening of any sort of vegetables suitable for man's food, and the interior of which, so far as known, is largely composed of ice-water bogs in summer, and frozen lakes for eight out of the twelve months in the year. Plainly, so far as I could see or hear, Alaska is as illy adapted to grazing as to farming purposes. The climate is against either of those industries, and though the possibility of a family's existence by farming or cattle raising in Alaska is not denied, its practicability is doubted."*

The Territory is valuable mainly for the variety and abundance of costly furs, which it furnishes to the world, and for its salmon fisheries. Its area is about 580,000 square miles.

There are but few white people in Alaska, the most of the inhabitants being Esquimaux and Indians.

Yukon, the chief river of Alaska, rises in British America and flows into Behring Sea. It is estimated to be 2000 miles

*"A Trip to Alaska"—Boardman.

in length, and equal to the Mississippi in width. At present there is nothing tributary to it that is capable of creating a commerce. "Two stern-wheel steamers appear to be capable of satisfying the want of commerce upon the Yukon at present and for a long time to come."

Sitka, formerly the capital of Alaska, is situated on an island off the west coast. Population 500.

Fort Wrangell, a military post of Alaska, is situated on Wrangell Island, about 150 miles southeast of Sitka. It contains the most white inhabitants of any town in the Territory.



CHAPTER IX.

MEXICO, CENTRAL AMERICA, WEST INDIES, AND THE BERMUDAS.

Mexico.—

Contains an area of 763,804 square miles, and a population of 9,577,279. Of this population 5,000,000 are Indians, and about 1,000,000 are native whites, chiefly of Spanish descent. The remainder are mixed races, except about 50,000 Europeans, mostly Spaniards.

The surface consists of a great table-land, bordered by narrow strips of lowlands on the Pacific and Gulf coasts. The elevation of this table-land gradually increases from the northern boundary to about the latitude of Vera Cruz, where it reaches the altitude of 8,000 feet, and is crowned by a number of volcanic peaks which reach above the snow line, of these, Popocatepetl, 17,853 feet, is the highest. From here, the elevation gradually diminishes towards the south.

Owing to the nearness of the plateau to the coasts, the rivers of Mexico are little more than mountain torrents rushing impetuously from terrace to terrace on their way to the sea. They are available for navigation only for short distances in their lower reaches, where they flow through the narrow strips of level coast lands. The lakes are all small. Lake Chapala, the largest, is about one-fourth as large as Lake Ontario.

The climate of Mexico is affected far more by the relief of the land than by its distance from the equator. From the level of the sea up to about 3,000 feet, the climate is hot, and very unhealthy in the south. "Yellow fever and black vomit are here endemic." From 3,000 up to 8,000 feet, the climate is

temperate, and one of the very finest in the world. From 8,000 feet upwards, the climate is cold, and the rainfall slight.

In the "hot lands" are extensive virgin forests abounding in valuable timbers, dyewoods, and medicinal and other useful plants. Amongst the most important of these forest plants are rosewood, mahogany, caoutchouc, copal, jalap, sarsaparilla, and vanilla. The cultivated crops are maize, rice, indigo, cotton, tobacco, coffee, sugar, cocoa, and bananas.

The principal forest trees of the "temperate lands" are the evergreen, oak, and cedars; a great variety of cacti is found on the plateau, some of them reaching a height of twenty feet. The chief crops are maize, wheat, tobacco, coffee, olives, mango, and the vine.

The characteristic plant of the "cold lands" is maguey, whose fruit is edible, and whose fermented juice, the famous *pulque*, is the national drink of the Mexicans.

Mexico is very rich in mines of silver, gold, copper, iron, tin, and sulphur.

The principal manufactures are sugar, rum, wine and brandy, earthen and stone ware, paper and olive oil.

Mexico is a Federal Republic, comprising twenty-seven States, one Territory, and a Federal District. For a table of these see Encyclopedia Britannica.

The President, Senate, and the Supreme Judiciary, are chosen by popular suffrage, for four years, and the lower house for two years. The Chief Justice is *ex-officio* Vice President. The constitution comprises three departments—legislative, executive, and judicial. Each State is represented in the House of Representatives, in the proportion of one member for every 80,000 inhabitants, and in the Senate by two members elected by the legislature.

The Spanish is the legal language, and the vernacular of the most of the people.

Matamoras, a well-built town of northeastern Mexico, is on the right bank of the Rio Grande, forty miles from the Gulf of Mexico. It is of historical importance.

Vera Cruz, the principal seaport of Mexico, is situated on the Gulf of Mexico. Its trade is equal to that of all other Mexican ports combined. The principal exports are bullion, sugar, coffee, cochineal, indigo, logwood, flour, and drugs.

Bay of Campeachy, the southern arm of the Gulf of Mexico.

The *Gulf of Tehuantepec*, an arm of the Pacific Ocean, is situated south of the Isthmus of Tehuantepec. There has been some talk of connecting these two gulfs by a ship railroad.

Acapulco, noted for its shipments of fruits, is on the southwestern coast of Mexico.

Cape Corrientes.

Guaymas, the western terminus of the Atchison, Topeka, and Santa Fe Railroad system, is situated in Northwestern Mexico, on the Gulf of California.

Cape San Lucas, the southern extremity of Lower California.

Mexico, the capital of the Republic of Mexico, is situated in a beautiful valley, at an elevation of 7,524 feet above sea level. It is the largest and finest city of Spanish America. Most of the inhabitants are pure-blood Indians or Mestizoes. The cathedral of Mexico "is the largest and most sumptuous church in America." Population 241,110.

Puebla, noted for its large number of richly-decorated religious edifices, is situated on the great table-land, southeast of the City of Mexico.

Sketch Mexico.

CENTRAL AMERICA.—Consists of five independent Republics, and a British Colony.

The surface consists of a plateau, bordered on the east and west by narrow strips of lowland. On the western edge of the plateau is a range of mountains, which has an average elevation of from 3,000 to 5,000 feet, and contains several ac-

tive volcanoes double that height. From these mountains the plateau descends by terraces towards the Caribbean Sea.

The mineral wealth of the country is not much developed.

There are no rivers or lakes of importance, except Lake Nicaragua, and its outlet, the San Juan River. Both the lake and the river are of importance in connection with the inter-oceanic canal which, at some time in the near future, may be built through here.

Much of the country is covered with dense forests. Among the most valuable trees are mahogany and caoutchouc.

The climate is hot and moist in the lowlands, but in the interior it is more agreeable.

The principal crops are coffee, sugar, tobacco, and indigo.

The inhabitants are mostly Indians or mixed races. The whites are of Spanish descent, and their language is the legal one.

Countries:

Guatemala,
Honduras,
San Salvador,
Nicaragua,
Costa Rica,
Balize, (a British Colony,)

Capitals:

New Guatemala,
Tegucigalpa,
San Salvador,
Managua,
San Jose,

Balize.

The West Indies.—The West Indies consist of three principal groups; the Greater Antilles, the Lesser Antilles, and the Bahamas.

The Greater Antilles comprise Cuba, Jamaica, Hayti, Porto Rico, and several small islands near their coasts.

Each of the larger islands is crossed in the direction of its length, by mountain ranges which vary in height from 2,000 to 8,000 feet.

Cuba, "the gem of the Antilles," is a long, narrow island containing 43,319 square miles, with a population of about 1,500,000. It is one of the great sugar fields of the world, and

in addition produces large crops of coffee, tobacco, oranges, lemons, pine-apples, and bananas.

The island belongs to Spain.

Havana, the capital, is near the west end of the island. It is a very important commercial city. The chief exports are sugar, cigars, molasses, oranges, and lemons.

Jamaica belongs to Great Britain. Its products, as well as those of the other islands of the group, are about the same as those of Cuba.

Kingston is the capital.

The Island of Hayti is next in size to Cuba. The western part of the island is occupied by the Republic of Hayti. Its inhabitants are mostly free blacks.

The capital is *Port-au-Prince*.

On the east end of the island is the Republic of Santo Domingo. The capital is *San Domingo*.

Porto Rico, "rich port," lies east of Hayti, and belongs to Spain. *San Juan* is the capital.

The Lesser Antilles are arranged in the form of a curve, from Porto Rico to South America, separating the Caribbean Sea from the Atlantic Ocean.

They are frequently subdivided into smaller groups, which it is not advisable to dwell upon here. They are owned mainly by Great Britain and France.

The Bahamas belong to Great Britain, and are situated east of the south end of Florida. They are generally low, long, and narrow. About twenty-five of the islands are inhabited, and produce cotton, maize, oranges, limes, and lemons. The principal exports are sponges, cabinet-woods, fruit, shells, and arrowroot.

Nassau, the capital of the Bahamas, is situated on the island of New Providence. Its harbor was a famous rendezvous for blockade-runners during the Civil War in the United States.

The Bermudas—Are a group of small islands which belong to Great Britain, situated 560 miles southeast of Cape Hatteras. They are surrounded on three sides by coral reefs, which extend, in some parts, ten miles from the islands. “The climate is delightful, an uninterrupted spring clothing the fields and trees with perpetual verdure.” The chief exports are arrowroot, potatoes, tomatoes, and onions, shipped extensively to the United States.



CHAPTER X.

SOUTH AMERICA.

South America, the fourth of the continents in size, is southeast of North America, which it resembles in form. Both are triangular, widest at the north and narrowing gradually toward the south. Its coast line is much more regular than that of the northern continent, and there are but very few good harbors.

The principal mountain system of each is next to the Pacific, the second in importance is close to the Atlantic, and the third is parallel to the northern coast.

The Andes Mountains, which may be regarded as a continuation of the Rocky Mountains, extend from the Isthmus to Cape Horn. They generally consist of two parallel ranges, but in some places there are three or more. These ranges are connected by numerous cross ranges, and enclose several large plateaus, the largest of which is the Plateau of Titicaca, lying partly in Bolivia and partly in Peru; it is about 300 miles long, and 100 miles wide. The Andes far exceed the "Rockies" in height, and contain many active volcanoes. The highest peak is Nevado de Sorata (25,000), in Bolivia.

The Espinhaco and Organ Mountains are on the eastern edge of the great plateau of Brazil, and prevent the rivers of that country from going directly to the Atlantic.

The Mountains of Guiana form the water-shed between the basins of the Amazon and Orinoco, and are less extensive than either of the other systems.

The great plain of South America reaches from the northern border of the continent to the southern extremity, and

is drained by three of the greatest rivers of the world. Professor Guyot has called attention to the fact, that in the New World the mountains are situated on the margins of the continents, and the plains in the interior, while in the Old World the mountains are in the interior and the plains along the margins. Let the pupils determine the truthfulness of this statement as to each continent.

Since the most of South America is situated in the torrid zone, its climate if dependent on latitude alone, would be very hot. But in this instance, as is frequently the case, the altitude of a place influences its temperature more than does distance from the equator. From the level of the sea up to an elevation of 2,000 feet, the climate is tropical, and where there is sufficient moisture, the vegetation is dense and rank. From 2,000 to 11,000 feet, the climate is temperate, and the vegetation moderate. From 11,000 feet to the snow line is the cold region, and mosses and lichens are the prevailing plants. The altitude of the snow line, in any latitude, depends somewhat on the width and elevation of the plateau on which the mountains rest. The higher and wider the plateau, the higher will be the snow line. The altitude of the snow line in equatorial America is about 15,000 feet.

The principal trees of tropical America, are the mahogany, rosewood, palm, India-rubber tree, cinchona (from whose bark quinine is made), and cow-tree. Vanilla, sarsaparilla, and ipécacuanha, are also products of the lowlands. The principal cultivated crops are coffee, sugar, cotton, cocoa, rice, maize, yams, mandioca (from which tapioca is made), and tobacco. The fruits are the orange, pear, pineapple, banana, etc.

The chief crops of the temperate region are such as are cultivated in the United States, with the addition of some fruits that are not grown in the latter country.

The mountains and plateaus of South America are rich in silver, gold, copper, quicksilver and other metals. But the

want of good roads renders the mines almost valueless, as the cost of transporting the ore to the coast, or machinery to the mines, is so great that mining is almost a profitless labor. The same cause hinders the advancement of agriculture, which at present is carried on in a very primitive manner. And there can be little hope of progress until the interior of the continent is made accessible to the outside world, by means of the locomotive and steamboat.

What has been said above about the climate, natural productions, and cultivated crops is applicable to all of the countries of South America, with the exception of Chili, Argentine Republic, and Uruguay, hence they need not be treated in detail. But the countries named are situated in the south temperate zone, consequently their climate and productions vary somewhat from those of the others, and will receive attention in due time.

All of the countries of South America, except, Brazil and the Guianas are Republics, modeled after the Government of the United States. Brazil is an Empire and the Guianas are European Colonies.

The United States of Colombia is situated in the northwestern corner of South America. The most of the country slopes towards the Caribbean Sea. The white inhabitants are of Spanish descent and speak the Spanish language.

Aspinwall, or Colon, is a seaport on the Atlantic side of the Isthmus of Panama.

Panama is on the Pacific side of the isthmus and is connected with Aspinwall by a railroad forty-seven miles in length. A canal is now being constructed between the two cities, and when completed, it will be of great importance to the commerce of the world. Why? Describe a voyage from New York City to San Francisco now; when the canal is completed.

Cartagena, a port on the Caribbean Sea, is an exceedingly hot and unhealthy city. Yellow fever is endemic and often

makes fearful ravages; leprosy is common. The city exports cotton, sugar, balsams, cinchona, coffee, and vegetable ivory.

Magdalena, the principal river, flows north into the Caribbean Sea.

Bogota, the capital, is on a high table-land, east of the Magdalena River. The city being subject to earthquakes the houses are low and built of sun-dried brick. It has a delightful climate, resembling perpetual autumn.

Cape Gallinas. the northern point of South America.

ECUADOR is situated south of the United States of Colombia. Its surface may be divided into three parts—the lowlands between the Pacific and the mountains, the mountains and plateaus in the center, and the lowlands east of the mountains. The two principal ranges of mountains are here quite close together, making the interior table-land somewhat narrow. The whites are of Spanish descent, and Spanish is the legal language.

Quito, the capital, is on a plateau, in the interior. Notwithstanding its position almost on the equator, Quito has a delightful climate, resembling that of perpetual spring. And, yet, eleven snow-capped mountains are in view from the city. The constant dread of earthquakes is the only serious drawback to the enjoyment.

Guayaquil, the principal seaport, is situated on the Gulf of Guayaquil. It exports coffee, cotton, tobacco, Panama hats, hides, and several kinds of barks.

PERU is in the western part of the continent. Its surface embraces the lowlands along the Pacific, the mountainous region in the interior, and the lowlands east of the mountains. Peru has very rich deposits of the precious metals, but its chief source of wealth is the guano found on the Chincha Islands, near the mainland. The rainfall west of the mountains is very slight, but on the east side it is very great. [Why this differ-

ence?] The Table-land of Cuzco was the center of the civilization, power, and wealth of the ancient empire of the Incas.

Cape Parina, the western point.

Lima, the capital, is situated on the Rimac River, seven miles from its entrance into the Pacific. The city has considerable commerce through the port of Callao. Population 101,500.

Bolivia.—The surface of Bolivia may be divided into two divisions—the mountains and plateaus in the west, and the low, fertile plain on the east. Bolivia formerly bordered on the Pacific for nearly 300 miles. But at the close of the war waged recently by it and Peru against Chili, the latter country annexed Western Bolivia and the southern part of Western Peru to its own possessions, and Bolivia is now an inland country. The most of the inhabitants are Indians and mixed races, but the ruling power is in the hands of the whites, who are of Spanish descent.

Lake Titicaca, next to the largest lake of South America, is situated on the boundary between Bolivia and Peru, at an elevation of 12,900 feet, being one of the highest lakes in the world. It was on an island in this lake that Manco Capac, the first Inca of the old Peruvians, miraculously appeared.

La Paz, the capital, is about forty miles east of Lake Titicaca, with which it is connected by railroad. The city is the center of the Bolivian trade in cinchona.

Chili lies west of the Andes Mountains, and extends from Cape Horn to about the parallel of La Paz, Bolivia. The northern part of the country comprises the desert of Atacama, on which no rain ever falls. This region is rich in silver, copper, quicksilver, etc., and is occupied by persons connected with the mines. Water for mining purposes and for the inhabitants, is conducted from the mountains by means of aqueducts.

The central part of the country has a mild, and moist climate, and abounds in forests of laurel, myrtle, and cypress. The principal crops are wheat, oats, hemp, potatoes, and fruits. Immense herds of cattle find pasturage on the upland. They are kept chiefly for their hides and tallow.

The southern part of the country consists of West Patagonia. The climate is wet, cold, and disagreeable. The country is covered with dense forests, and has but very few white inhabitants.

Santiago, the capital, is situated on a fertile plain at the foot of the Andes. The streets intersect each other at right angles, but, owing to the prevalence of earthquakes, the houses are rarely more than one story high. Each house is generally built in the form of a square, with an open space or court in the center. Two lines of railroad enter the city, and it is well supplied with street-railways. Population 150,000.

Valparaiso, "the vale of paradise," is the principal seaport on the west coast of South America. "The town is well lit with gas, is well paved, and has steam fire-engines and street-railways, and a public library." The English language is considered an essential branch of education, and is freely taught in the schools.

Patagonia is a cold, dreary region. The portion west of the Andes belongs to Chili. Rain falls almost incessantly, and the country is covered with dense forests.

The part of Patagonia which lies east of the Andes, is mainly a desert. No rain falls on the southern half of it, but the northern half has occasional showers. The country is claimed by the Argentine Republic. Nearly all of the inhabitants are uncivilized Indians who obtain a livelihood by hunting what few animals are found in the country, and stealing from the whites on the northern frontier.

The Strait of Magellan separates the island of Terra del Fuego from Patagonia.

Terra del Fuego is a bleak, barren country, inhabited by degraded savages, whose only aim and ambition in life is to obtain food enough to keep them from starving.

Cape Horn, the southern extremity of South America, is on a small island, south of *Terra del Fuego*.

Sketch the west coast of South America, and show the position of the cities studied.

The Falkland Islands are situated in the South Atlantic, east of the Strait of Magellan. The group consists of about two hundred, and constitutes a British Colony. The islands are entirely destitute of trees, but they are covered with a variety of flowers in November and December.

"The rearing of cattle and sheep is the principal industry, and hides and wool are the staple exports."

The people are of British and Spanish-American descent.

The Argentine Republic is situated in the south temperate zone. The surface is level, except in the western part, which is occupied by branches of the Andes. The great, treeless plains of the interior are called *Pampas*. They support immense herds of cattle and horses, which are the chief source of wealth to the inhabitants.

The eastern provinces are well supplied with forests of valuable trees.

The principal crops are cotton, sugar, tobacco, rice, wheat, peaches, and grapes. But agriculture is so generally neglected, that the productions are scarcely sufficient for home use.

Rio de la Plata, the second river of South America in size and importance, is formed by the union of Parana and Uruguay Rivers. It is 170 miles wide at its entrance into the Atlantic, and 30 miles at Buenos Ayres, and its tributaries drain nearly all of the Argentine Republic, Paraguay, and Uruguay.

Buenos Ayres, the capital, is on the right bank of the La Plata, about 150 miles from the Atlantic. The streets intersect each other at right angles, and many of them have street-

railways. The most of the houses are built of brick and whitewashed. The city has an extensive commerce, but its prosperity is impeded by the want of a good harbor. The river is so shallow that large vessels cannot come nearer than five or six miles to the city. The chief exports are hides, horns, tallow, bones, hair, ostrich feathers, wool and live stock.

PARAGUAY.—The small, inland country of Paraguay is situated between the Parana and Paraguay Rivers. Its principal productions are about the same as those of the Argentine Republic.

Assumption, the capital, is situated on the east bank of the Paraguay River, opposite the mouth of the Pilcomayo River. It has considerable trade in Paraguay tea, tobacco, and hides.

Sucre, the former capital of Bolivia, is situated on a plateau, near the headwaters of the Pilcomayo.

Sketch the Rio de la Plata and its tributaries.

URUGUAY is the the smallest of the South American Republics; it consists mostly of grassy plains, with a few low ridges of mountains in the interior. But little attention is given to agriculture, cattle and horses being the chief sources of wealth to the people.

Montevideo, the capital, is on the left bank of the Rio de la Plata. It has considerable commerce.

THE EMPIRE OF BRAZIL is the largest country of South America. It contains an area about equal to that of the United States, exclusive of Alaska, and a population about one-fifth as great.

The surface consists of a great plateau traversed by numerous ranges of mountains, and surrounded on three sides by lowlands.

The basin of the Amazon is valuable mainly for the natural production of its forests. Mahogany, rosewood, India-rubber

tree, Brazil-wood, cocoa-nut palm, sarsaparilla, copal, ipecacuanha, and vanilla are among the principal products.

From Bahia to the Bay of Paranagua, the principal crop is coffee. Brazil produces the most coffee of any country in the world.

From the Bay of Paranagua to the southern limit of the empire, and on the higher plateaus of the interior, the principal products are such as are common to all temperate regions.

Cotton, tobacco, rice and sugar bind together these three zones, being cultivated in all of them.

The white inhabitants are of Portuguese descent, and Portuguese is the legal language of the country.

Slavery exists in Brazil, but steps have been taken, looking to its extinction.

Rio Janeiro, the capital, and the most populous city of South America, is situated on Rio Janeiro Bay. This bay rivals the Bay of Naples in beauty and sublimity. It is about seventeen miles in length and eleven miles in width, and is entered by a strait, less than two miles wide. The many islands which dot its bosom and the lofty mountains which stand guard upon its margin are all covered with tropical verdure.

Rio Janeiro is the chief commercial city of South America, and is connected by regular lines of steamers with the leading maritime nations of Europe, and with several of the principal ports of North America. Its chief exports are coffee, cotton, sugar, rum, building timber, leather, tallow, gold, and diamonds. Population 229,000.

Cape Frio.

Bahia, an important seaport, is on the east side of the Bay of All Saints. Its exports are about the same as those of Rio Janeiro. "Bahia exceeds every other city in the empire in the number of its churches, monasteries, and convents."

San Francisco, an important river of Eastern Brazil, flows into the Atlantic Ocean. Near its headwaters are the richest diamond mines of the empire.

Cape St. Roque is the eastern point of South America.

The *Amazon River* rises in the central part of Peru and flows northwest for several hundred miles, when it heads to the northeast, and, on reaching the frontiers of Ecuador, turns almost due east, forming the boundary between Ecuador and Peru, and reaching the Atlantic on the Equator. It is 3,600 miles long, and is 50 miles wide just above the island of Joannes, or Marajo. "The volume and impetus of the river is so great that it carries its fresh water unmixed into the sea a distance of 200 miles." The basin of the Amazon embraces more than one-third of the continent, and is covered with magnificent forests, in which are found many valuable plants and trees. The wooded plains of the Amazon are frequently termed *Selvas*.

Para, the commercial emporium of the Amazon valley, is situated on the south bank of the Para River, about seventy miles from the Atlantic. Its commerce is very extensive, the chief exports being cotton, coffee, tobacco, vanilla, dye-woods, and wax. The Para River is twenty miles wide at this point. The island of Joannes, or Marajo, is situated between the Amazon and Para Rivers.

The principal southern tributaries of the Amazon are the Xingu, Tapajos, Madeira, and Ucayali (which is considered by many as the true Amazon). The more important northern tributaries are the Rio Negro, Yapura, and Napo.

Sketch the Amazon and its tributaries.

French Guiana belongs to France, and is used by that nation as a place of banishment for political offenders. The climate is very hot and unhealthy.

Cayenne, the capital is on an island near the coast.

Dutch Guiana is an important Dutch Colony. The most of the inhabitants are negroes and mixed races. Dutch is the legal language of the Colony, and Dutch laws and customs prevail.

Paramaribo, the capital, is on the Surinam River. It has considerable commerce.

British Guiana is the largest and most important of the Guianas, and belongs to Great Britain. The principal products are about the same as those of the other Guianas, and consist of rice, sugar, maize, vanilla, tobacco, cinnamon, and chocolate.

Georgetown, the capital, is situated on the coast. The city is an important commercial center. Most of the streets have canals running through them.

The Republic of Venezuela is in the northern part of South America, and borders on both the Caribbean Sea and the Atlantic Ocean.

The surface consists of a narrow strip of lowland on the north, a mountainous region in the center, and the valley of the Orinoco to the south.

The climate and crops resemble those of the other Andean countries of South America.

Orinoco, the third river of South America in size, is almost entirely in Venezuela. It has navigable connection with the Rio Negro, by means of the Cassiquiare River. The low plains along the Orinoco are known as the *Llanos*. In the rainy season, the Llanos are covered with water and the Orinoco presents the appearance of a great inland sea on its way to the ocean. In the dry season they are covered with moving hills of sand and dust. Sketch the Orinoco.

Caracas, the capital, is built on a plateau, about twelve miles from the coast. Its commerce is through the port of La Guayra.

Maracaybo, the largest lake of South America, is situated in the northern part of Venezuela and is sometimes called a gulf. It is connected with the Caribbean Sea by the Strait of Maracaybo, a channel 45 miles long and from 4 to 14 miles wide.

Sketch South America, showing its mountains, principal rivers, and cities.

CHAPTER XI.

GREAT BRITAIN AND IRELAND.

The British Isles consist of the Islands of Great Britain and Ireland with a few smaller ones near their coasts. On the Island of Great Britain are situated England, Scotland, and Wales.

In teaching the geography of the British Isles, follow the general plan you have adopted of teaching first the contour or outline of the country, next its relief or surface, and afterwards its political geography.

To Americans, Great Britain is next in importance to their own country, hence its geography should be studied with considerable care and fullness, but too much should not be attempted. If, in your judgment, too many places are here suggested, leave out some of them, and give only such, and as many, as the grade of your pupils will justify you in giving.

Great Britain.

Shetland Islands, a group of small island northeast of Scotland. "Shetland ponies."

Orkney Islands, separated from Scotland by Pentland Firth.

Duncansby Head, the northeast point of Scotland. Near here was "John O'Groat's House." [See "Noted Names of Fiction," Webster's Unabridged Dictionary.]

In sailing south along the east coast of Great Britain, notice the following points:

Moray Firth, from the head of which the Caledonian canal extends southwest to the Atlantic Ocean. Length of canal, 60 miles, 38 of which are through Lochs. This canal, because of its being on different levels, has several *Locks*.

“A lock is a curious way of making boats climb up hills, for canals must sometimes be made on ground that is high in one part and low in another. Where a high and low level meet it is necessary to build what is called a lock. This is a shaft or well-hole of stone, carefully laid in cement so as to be water-tight, extending down from the upper to the lower level of the canal, with a gate on one side, at the bottom, opening into the lower level, and another on the opposite side at the top, opening into the upper level. These gates or doors can be shut so as to be water-tight. When a boat is to go up hill, the door at the top being closed, the one at the bottom is opened, and the boat floats through into the lock. The door is then closed and the upper one is gradually opened, letting the water run down into the lock until the water in the lock is on a level with that in the upper canal. The upper door or gate is then opened, and the boat floats out upon the upper level. There are so many of these locks in some localities that they resemble a flight of stairs.”—*Monteith's Popular Science*.

Inverness, the largest city in the Highlands. Four miles northeast of it is the battle field of Culloden.

Aberdeen, an important commercial city, noted for its docks and ship yards.

Grampian Hills, a range of mountains extending northeast and southwest through Scotland, and forming the boundary between the Highlands on the north, and the Lowlands on the south.

Dundee, a very important city of Scotland, is situated on the Firth of Tay about midway between Aberdeen and the Tweed River. It manufactures the most linen, hemp, and jute, of any city on the Island of Great Britain.

Firth of Tay.

Perth, formerly the metropolis of Scotland and the scene of many important historical events.

Firth of Forth.

Edinburgh, the capital of Scotland and one of the most beautiful cities of Europe, is two miles south of the Firth of Forth; its sea-port is Leith, a city of 50,000 inhabitants. Edinburgh is built upon a series of hills, giving it an undulating appearance. The houses rise range above range on the steep sides of these hills. A person can stand on one street and look down, perpendicularly, upon the roof of houses on the streets below, which are six and seven stories in height. The Castle crowns the highest hill, and near it is Holyrood Palace, formerly the abode of royalty.

Among the many objects of interest to tourists, are the Scott Monument, the Castle, Grassmarket Square, the Parliament House, and Holyrood Palace. Population, 225,000.

Forth River, rises on the side of Ben Lomond, and flows east into the Firth of Forth.

Stirling, a city of historical importance on the Forth River.

Bannockburn, a famous battlefield two and a half miles south of Sterling. Here the Scots under Robert Bruce gained a great victory over the English, in 1314.

Ascending the Forth River from Stirling, we soon come to the Teith River flowing in from the northwest. If we ascend the Teith we shall come to a chain of lakes famous for their scenery. The first is Loch Vennachar, in which the river rises, the next is Loch Achray, and the third is Loch Katrine, immortalized by Sir Walter Scott in his "Lady of the Lake."

Why not devote one recitation period, at least, to a study of the scene of this poem? Before beginning the exercise, place on the blackboard a sketch showing the three lakes, and Ben Venue, Ellen's Isle, the Trossachs, and Coilantogle Ford. Mark the passages of the poem, which you wish to have read, and let some member of the class do the reading. As the references to the places on the sketch are reached, let them be pointed out, and their names written by them.

Such an exercise would be profitable, not only in vitalizing the study of geography, and imbuing it with sunshine, but also in creating a taste for good, pure literature, which is one of the great needs of our time.

The *Tweed River* forms the boundary, in part, between Scotland and England. On this river is Abbotsford, which was the home of Sir Walter Scott.

Cheviot Hills, partly on the boundary between Scotland and England.

Before proceeding farther, the pupils should sketch the east coast of Scotland. The value of this work will depend largely on the faithfulness with which the sketching is done. Hence, all should sketch, either on the blackboard or on paper.

In the northeast corner of England is Flodden, made famous by Scott in his "Marmion."

Newcastle, or *Newcastle-upon-Tyne*, an important city situated on the Tyne River, eight miles from its mouth. It is the center of the great northern coal-fields, "which employ about 50,000 men and boys on land, and some 72,000 in the coasting carriage, apart from the numbers engaged in the long sea coal trade." Iron ship-building is next to coal-mining, the most important industry in Newcastle; but it is extensively engaged in the manufacture of iron ware of all sorts.

Pennine, a range of mountains extending south from the Cheviot Hills, through the center of England.

Hull, or, *Kingston-upon-Hull*, the third port in England, is situated at the junction of the Hull River with the Humber

Humber, an estuary, formed by the Ouse and Trent Rivers, and two or three smaller streams.

York, on the Ouse River, has considerable commerce and manufactures, and is noted for its beautiful cathedral.

Leeds, a city southwest of York, is noted for the manufacture of woolen goods.

Sheffield, a city south of York, on the Don River, is noted for the manufacture of cutlery.

Nottingham, an important city situated near the Trent River. It is especially noted for the manufacture of hosiery and lace, in which employment 200,000 persons are engaged, in the city and surrounding country.

Eight and a half miles northwest of Nottingham is Newstead Abbey, the home of Byron.

Birmingham, the fourth city of England in population, is situated on a tributary of the Trent. Its manufactures comprise all kinds of iron, steel, and brass goods. It is especially noted for the manufacture of fire-arms.

"About 20,000,000 steel pens are made weekly in the town."
The *Wash*.

Lincoln, an important city situated north of the Wash,

Great Ouse.

Cambridge, the seat of a famous university, is situated on the Cam River, a branch of the Great Ouse. The university consists of seventeen colleges and halls.

Bedford, a city on the Great Ouse, is famous for the imprisonment of John Bunyan. He wrote "Pilgrim's Progress" while imprisoned here.

Yarmouth, the most eastern town in England, is at the mouth of the Yare River. It is the seat of the English herring-fishery.

Thames, the most important river of England, is formed by the junction of the Isis and Cherwell. "Its basin, compared with that of the Amazon, is insignificant in size, yet it contains a population more than fifteen times that of the basin of the Amazon."

Greenwich, a city on the right bank of the Thames, four miles down the river from London. It is from the Royal Observatory situated here that longitude is reckoned.

London, the capital of the British Empire and the largest city in the world, is situated on both sides of the Thames,

about fifty miles from its mouth, in latitude $51\frac{1}{2}^{\circ}$ N. Its population is 3,814,571; nearly equal to that of New England.

London is the commercial metropolis of the world, and its financial capital.

Among the most noted buildings in the city, are Westminster Abbey, St. Paul's Cathedral, the Tower, and the Houses of Parliament.

Windsor, the residence of the Queen, is on the right bank of the Thames, a short distance above London. Near Windsor is Runnymede, where, in 1215, the barons compelled King John to grant the Magna Charta.

Oxford, the seat of one of the great universities of England, is on the Thames River. Its university consists of twenty-one colleges and five halls.

Canterbury, an inland city in the southeastern part of England, is noted for its cathedral, and for being the residence of the Archbishop of Canterbury, the highest ecclesiastical officer in England.

Strait of Dover, twenty-one miles in width.

Dover, on the Strait of Dover.

Hastings, on the English Channel, noted for the great victory won, seven miles northwest of there, in 1066, by William the Conqueror.

Brighton, a famous summer resort and watering-place.

Isle of Wight, the principal island on the south coast of England. On it is the home of the poet Tennyson.

Portsmouth, the principal naval station of England and the most perfectly fortified city in Great Britain, is on an arm of the English Channel.

Plymouth, a seaport city.

Scilly Islands, a group of small islands at the southwest point of England.

Land's End, the southwestern point of England.

Bristol Channel, noted for its high tides.

Severn rises among the mountains of Wales and flows into Bristol Channel. It is navigable for small vessels through the most of its course.

Bristol, an important seaport, on the Lower Avon, about eight miles from the Severn. The Cabots sailed from here to America in 1497.

Stratford, a small town on the Upper Avon, is noted for being the home of Shakespeare.

Worcester, an important city of western England, is situated on the Severn River. It is noted for the manufacture of porcelain.

Noticing that the source of the Severn is in the Cambrian Mountains, we descend that stream and sail west on Bristol Channel. In southern Wales, we find

Merthyr-Tydfil, an inland town, noted for the great coal and iron fields in its vicinity.

It is said that the first locomotive used in the world was used in connection with the mines at this place.

Swansea, a seaport of Wales, is noted for its copper-smelting furnaces. Copper ore is sent here from all parts of the world to be smelted.

St. David's Head, the southwestern point of Wales.

St. George's Channel.

Holyhead, one of the naval stations of Great Britain, is situated on a small island by the same name, at the northwest corner of Wales. It is the nearest British port to Dublin.

Irish Sea.

Liverpool, the second city of Great Britain in commercial importance, is situated on the right bank of the Mersey River, three miles from the Irish Sea. Its docks extend seven miles along the river, and have an area of 1,400 acres. Nearly all the raw cotton brought to Europe first finds its way to Liverpool, and is then distributed among the towns on the continent. The population is about the same as that of Chicago.

Manchester, the leading city of the world in the manufacture of cotton goods, is on the Irwell River a few miles north of the Mersey. Its proximity to the rich coal-fields of northern England has had a marked influence on its prosperity. Population about the same as that of St. Louis.

Isle of Man, one of the most noted watering places in Great Britain, is about equi-distant from England, Scotland, and Ireland. The people speak the Manx language.

Cumbrian Mountains, in the northwestern part of England.

Solway Firth, partly separates Scotland from England.

Eden, a river of northern England, between the Pennine Mountains and the Cumbrian, flows into Solway Firth.

Dumfries, the most important town of Southwestern Scotland, is on the Nith River, eight miles from the Solway. The city is extensively engaged in the manufacture of woollen goods and hosiery. The grave of Robert Burns is here.

Mull of Galloway, a rocky headland forming the southwestern point of Scotland.

North Channel.

Firth of Clyde, an arm of the North Channel.

Ayr, "Auld Ayr, whom ne'er a town surpasses
For honest men and bonnie lasses;"

is situated on a river of the same name. The birthplace of the poet Burns is but two miles from Ayr.

Will it not pay both teacher and pupils to give an hour to the study of some of the places made famous by "the poet of the people"?

Clyde, an important river of Scotland, flows into the Firth of Clyde. It was the first river regularly navigated by steamships, and is now noted for the large number of iron steamships built along its banks,

Paisley, an important manufacturing city, is situated on a branch of the Clyde River. It is especially noted for "Paisley Shawls."

Glasgow, the most populous city of Great Britain next to London, is on the Clyde River, twenty-one miles from its mouth. It is noted for its commerce and manufactures. Its chemical works are the greatest in the world, and owing to its being the center of a great coal and iron field, it takes a leading position in the manufacture of cotton goods, silks, and iron ships. Population 750,000.

Kintyre, a peninsula between the Firth of Clyde and the Atlantic.

Ben Nevis, the highest point of land on the British Isles, is situated east of the south end of the Caledonian canal. Its height is 4,406 feet.

Fingal's Cave, one of the wonders of the world, is on the Island of Staffa.

Hebrides, a group of Islands on the west coast of Scotland, separated from the mainland by the Minch.

Cape Wrath, the northwestern point of Scotland.

SURFACE.—If a line be drawn from Plymouth to York, nearly all the lowland in England will be east of it and the mountains west. The land in the vicinity of the Wash is very low, much of it has been reclaimed from the North Sea.

The Cambrian Mountains extend over nearly all of Wales. "They do not form a continuous range, but rather rise in distinct groups, separated by low passes, and spreading out sometimes into elevated table-lands, intersected by deep and fertile valleys." Snowden, 3,590 feet in height, is the "Crown" of the Cambrians.

The area of Wales is nearly the same as that of Massachusetts.

The Cumbrian Mountains are situated in the northwestern part of England, and constitute a *group* of mountains rather than a chain. They have steep, craggy sides, and are separated by deep, narrow valleys, in many of which are beautiful

ponds or lakes. The most famous of these are Windermere and Derwent-Water. Near the latter are the "Falls of Lodore." Because of its scenery, this region is frequently spoken of as the "Switzerland of England."

The Pennine Mountains connect on the north with the Cheviot Hills, extend south through the center of England to the Trent River, and are separated from the Cumbrians by the valley of the Eden. In the main they consist of a high plateau, quite wide on top.

The principal manufacturing districts of England are found east and west of these mountains, because of the large coal-fields in the vicinity.

The Grampian Hills divide Scotland into two parts—the Highlands on the north, and the Lowlands on the south. The valleys of the Clyde and Forth comprise the principal part of the level land that is found, even in the Lowlands; while in the Highlands there is no valley of sufficient size to relieve the country from its very rough and mountainous appearance.

The area of Scotland is about equal to that of South Carolina, and its population to that of Illinois.

Climate.—The climate of Great Britain is mild and equable. Lying in the course of the tepid waters of the Gulf Stream, it is saved from the extremes of climate to which other countries in the same latitude are subject.

In summer, when the temperature of the land is higher than that of the ocean, the latter exercises a moderating influence upon the degree of heat. And in winter the warm waters raise the temperature of the land, making it equal to that of North Carolina.

The climate of the west coast is milder and more even than that of the east coast. Mid-winter is colder in London than in the Hebrides. In no part of the island do the rivers become ice-bound as they do in Illinois, although much farther north.

But this moderate climate has its disadvantages. Cold, disa-

greeable rains accompanied by strong winds, are frequent in winter. Grains must be sown in February and March in order to ripen in August and September; and Indian corn will not mature at all on the island.

Leading Industries.—The area of England is less than that of Illinois, and it has more land that cannot be cultivated than the latter has, yet it has seven times as great a population.

To support these millions requires more food than the soil is able to produce, notwithstanding the perfection which the English have attained in *agriculture*. And although all the arable land is cultivated with care, and made to yield the greatest possible harvests, a large portion of the food of the people has to be imported from other countries.

The principal crops are wheat, oats, rye, barley, Irish potatoes, turnips, peas, etc.

Next in importance to agriculture, are the *mineral resources* of the island. Of these coal is the most important, and iron next. But lead, tin, copper, and zinc, are found in large quantities. The manufacture of iron, and iron ware of all descriptions, from a nail to a locomotive, and from a toy pistol to the largest sized cannon, is very valuable.

The great *manufacturing* districts of England are in the north, in the vicinity of its coal-fields, to which they owe much of their prosperity.

The leading manufacture is that of *cotton-goods*, which form two-fifths of the exports of Great Britain.

Woolen and *worsted goods* rank next in importance to cotton fabrics.

The manufactures of silk, flax, hosiery, and lace, are of great value, but dwindle into insignificance when compared with cottons and woolens.

Great Britain is pre-eminently a commercial nation. Much of the carrying trade of the world is done in British ships, whose sails dot all seas.

As a test of their knowledge of the subject, let the pupils sketch the island showing all places studied. Let the following order be observed; first, the outline, next the mountains, followed by the rivers and lakes, and last the towns.

The children will do this sketching creditably, if they have sketched each day's lesson as the work progressed. If they have not, the teacher is blameworthy.

It will also be found profitable to make a scheme for each country, somewhat after the plan of the following scheme for England:

- England.
1. Boundaries. {
 1. Scotland.
 2. North Sea.
 3. Strait of Dover.
 4. English Channel.
 5. Atlantic Ocean.
 6. Bristol Channel.
 7. St. George's Channel.
 8. Irish Sea.
 9. Solway Firth.
 2. Relief. {
 1. Low England.
 2. High England. {
 1. Devonian Mts.
 2. Cumbrian Mts.
 3. Pennine Mts.
 3. Drainage. {
 1. Lakes. {
 1. Windermere.
 2. Derwent-Water
 2. Rivers. {
 1. Tyne.
 2. Humber.
 3. Ouse.
 4. Trent.
 5. Great-Ouse.
 6. Cam.
 7. Thames.
 8. Severn.
 9. Lower Avon.
 10. Upper Avon.
 11. Mersey.
 12. Eden.
 4. Climate—Mild and equable.
 5. Industries. {
 1. Agriculture.
 2. Mining. {
 1. Coal.
 2. Iron.
 3. Lead.
 4. Tin.
 5. Copper.
 6. Zinc.
 3. Manufactures. {
 1. Iron ware.
 2. Cotton goods.
 3. Woolen and worsted goods.
 4. Silk, linen, hosiery.
 4. Commerce.
 5. Cities. (Write here names of all cities studied in England.)

Ireland.—In the northern part of Ireland is

Lough Foyle, an arm of the Atlantic Ocean; into it flows the Foyle River.

Londonderry, an important city of Northern Ireland, on the Foyle River.

The Giant's Causeway, east of Lough Foyle, is "a pavement formed of the tops of 40,000 columns of basalt, incessantly washed by the waves of the sea. * * * According to the legend, the Giant's Causeway is the remnant of a road which formerly led into Scotland, and, except that this highway was not constructed by human hands, the legend is true. The strait which now separates Ireland from Scotland, and which has a width of only 14 miles, had no existence at the time when the volcanic agencies were most active."*

North Channel.

Belfast, the most prosperous town in Ireland, is built on an arm of the North Channel. It is the great center of the Irish linen trade.

Drogheda, situated on the Boyne River, four miles from its mouth, is noted for the massacre of its inhabitants by Cromwell, in 1649, and for the "Battle of the Boyne," 1690. The "Orangemen" celebrate the anniversary of this battle.

Dublin, the capital, is on both banks of the Liffey River, a small stream which flows into the Irish Sea.

The city has considerable commerce, and some manufactures.

It has several beautiful parks, the most noted of which is Phoenix Park, containing 1,753 acres.

Dublin is the residence of the Lord-Lieutenant of Ireland, who is the principal representative of the British Government in Ireland. Population 275,000.

St. George's Channel.

Carnsore Point is the southeastern corner of Ireland.

*Reclus's "Europe," Vol. IV, pp. 384 and 385.

Note the position of this point with reference to Southwestern Wales.

Queenstown, a city of 10,000 inhabitants, situated on an island in Cork Harbor. It owes its importance to its harbor which is said to be the finest in Europe. Steamers from America bound for Liverpool usually call at Queenstown.

Cork, the great commercial center of Southern Ireland, is situated on the River Lee, eleven miles from its entrance into Cork Harbor. It is the third city of Ireland in size, ranking next after Dublin and Belfast.

Cape Clear.

Valentia, an island on the southwest coast, is the eastern terminus of several lines of "Atlantic Cables."

Lakes of Killarney, three connected lakes in the southwestern part of Ireland, noted for their great beauty.

Shannon, the largest river of Ireland, rises north of the center of the island and flows southwest through a number of lakes into the Atlantic. It is navigable throughout nearly its entire length.

Limerick, the leading port on the west coast, is situated on the Shannon River. It has considerable commerce.

Galway, a thriving city, on a bay of the same name, is nearly due west from Dublin.

Sligo is the principal seaport in Northwestern Ireland.

Malin Head is the northern point of Ireland.

Ireland has an area of 32,393 square miles and a population of 5,500,000. Its outline is very irregular, being indented by many bays which form safe and commodious harbors.

The surface of Ireland is very uneven. In the center is a great plain, extending from the Irish Sea to the Atlantic Ocean. North and south of this plain are found many isolated mountain systems. The principal ones are the Macgillicuddy Reeks in the southwest, 3,414 feet in height, and the Wicklow Mountains in the southeast.

The climate of Ireland is very humid. "No other country of Europe is so abundantly supplied with rain." This abundance of moisture, with an exemption from extreme heat or cold (which is secured to it by its position in the path of the Gulf Stream), accounts for the wonderful greenness of the "Emerald Isle."

The crops are wheat, oats, barley, rye, potatoes and turnips. Large numbers of cattle and sheep are raised. Owing to the great humidity of the climate, the crops mature slowly. Wheat does not ripen before the first of September, and the other grains ripen still later.

Minerals are not found in sufficient quantities to pay for mining them.



CHAPTER XII.

NORWAY, SWEDEN, AND THE BALTIC PROVINCES OF RUSSIA.

We pass from the study of the British Isles to that of the continent, and begin with its most northern point, which is

North Cape, latitude $71^{\circ} 10'$. We now pass southwest along the west coast of Norway, noticing the following places:

Hammerfest, the most northern town of Europe, and one of the principal fishing stations on the coast. It has a continuous day from May 16 to July 27, as the sun does not sink below the horizon during that time; and it has continuous night from November 21 to January 31, as the sun does not appear above the horizon during that period. Population 2500.

Lofoden Islands, noted for the great value of their herring and cod fisheries.

Maelstrom, a noted whirlpool south of the Lofoden Islands.

In passing south from here, notice the position of the Arctic circle, and call attention to the ragged appearance of the coast of Norway.

Trondhjem, formerly the capital of Norway, is situated on a fiord of the same name at the great bend in the western coast. It is the third city of Norway in population and commerce. The King of *Norway* and *Sweden* is here crowned King of *Norway*.

Bergen, the second city of Norway in population, is situated on the southwestern coast, and is a busy, enterprising city. Its prosperity is largely due to its trade in fish.

The *Naze*, a cape at the southern end of Norway.

Skager Rack, a channel south of Norway.

Christiania, the capital and largest city of Norway, is situated at the head of a bay of the same name. It has an exten-

sive commerce, and is rapidly becoming an important manufacturing center. The king is obliged to reside here three months each year. Lat. $59^{\circ} 55'$; pop. 116,000.

Cattegat, the channel which separates Denmark from Sweden.

Gotha River is the outlet of Lake Wener, and flows into the Cattegat; it is navigable its entire length.

Goteborg, the second city of Sweden in size, and first in commercial importance, is situated on the Cattegat at the mouth of the Gotha R. It has one of the finest botanic gardens in Europe.

Wener, the largest lake in Sweden.

Baltic Sea.

Carlskrona, a strongly fortified city and the principal naval station of Sweden, is situated on several small islands in the Baltic, at the south end of Sweden.

Gotland, "good land," is the largest island in the Baltic Sea. It belongs to Sweden.

Wetter, an important lake of Sweden, is situated east of L. Wener, with which it is connected by a canal. These lakes with their outlets and connecting canal, afford a short and safe route across Sweden for steamers of light draft.

Stockholm, the capital of Sweden and the largest city of the peninsula, is situated partly on eight islands in the outlet of L. Maelar, and partly on the banks of the river. Although the different parts of the city are connected by excellent bridges and causeways, yet, small steamers are found more useful than omnibuses for travel. A peculiarity of the city is that "only a small number of the people live in houses of their own, the majority living in rented flats. Lat. $59^{\circ} 21'$; pop. 174,000.

Maelar, a beautiful lake, is west of Stockholm, and contains over 1400 islands. These, with the shores of the lake, are dotted with towns and villages.

Call attention to the swelling of the Swedish coast in the

vicinity of Stockholm, and notice that this projection is opposite the Gulf of Finland.

Upsala, the seat of the principal university of Sweden, is situated on a small river that flows into L. Maelar. Here tradition locates the "High Hall," or Walhalla of the Scandinavian gods, and near it the graves of Odin, Thor, and Freya.

Gulf of Bothnia, the name given to that portion of the Baltic Sea north of Stockholm and the Gulf of Finland.

Tornea, a small river on the boundary between Sweden and Russia, flows into the Gulf of Bothnia.

We have now passed around the Scandinavian peninsula, observed its shape, and located a few of its principal capes, bays, lakes and cities. Let the pupils make a sketch of the peninsula on the blackboard, and on it locate the points learned. When this is done call their attention to the surface.

The Scandinavian Mountains extend from the northern point of the peninsula to the Naze. The boundary line between the two countries follows, for the most part, the line of highest elevation. The mountains are divided naturally into the Kiolen mountains on the north, and extending south to Trondhjem, and on the south the Dovrefield. Among the Dovrefield is found "the largest snow field in Europe, with an area of 360 square miles, encircled by inaccessible rocks, and everywhere skirted by glaciers."

The Norwegian slope of the mountains is not, on an average, more than one-fourth as wide as the Swedish slope, hence the surface of Norway is much more broken than that of Sweden.

On account of its rough surface, Norway has no navigable rivers, but many of them are noted for the wonderful beauty of their falls and rapids.

The Scandinavian peninsula passes through as many degrees of latitude as from Maine to Florida, hence, its climate varies considerably. It is more mild and even on the west

coast than in corresponding latitudes on the east, the difference being due to the influence of the Gulf Stream.

Where the nature of the surface admits of it, agriculture is the leading industry of the people. Large crops of the cereals and common fruits are raised, especially in Sweden, which is the better fitted for farming.

Fishing furnishes employment for a large number of the inhabitants, and both countries reap a rich harvest from their magnificent forests.

Attendance at school is compulsory between the ages of seven and fourteen. This may account for the industry and intelligence of the people, and their proverbial politeness. Both countries are ruled by the same king, but each makes its own laws.

Lapland, a country of northern Europe, having an area of 33,000 square miles, and lying partly in Norway and Sweden, and partly in Russia, is a cold and dreary region. The people are short of stature, and not overly clean in their habits. Their main dependence for food and clothing is the reindeer; it is also their beast of burden. Russian Lapland forms the northwestern province of the Empire.

Finland, is a province of Russia, south of Lapland; more than half of its surface is covered with lakes. Four-fifths of the people are engaged in agriculture.

Gulf of Finland, a long, narrow arm of the Baltic Sea.

Cronstadt, the great naval station of Russia, is situated on an island in the Gulf of Finland.

St. Petersburg, the capital and largest city of Russia, is situated on the Neva River, near its mouth. The city is built in a swamp, and to save it from sinking into the ground, it is built on piles driven to great depths. So great were the sufferings endured by those who laid the foundations of the city that 100,000 lost their lives. It is frequently spoken of as the "Paris of the North," on account of its magnificent streets,

majestic buildings, and the gayety of its people. Lat. $50^{\circ} 56'$; pop. 876,000.

You will notice that the capitals of Russia, Sweden and Norway are nearly on parallel 60° N. To the east, this parallel passes close to Yakoutsch, the coldest city in the world. To the west it passes through the southern point of Greenland, northern Labrador, Mount St. Elias, and along the southern shore of Alaska. Why is not the climate of Labrador and Siberia as mild as that of Norway, Sweden and Russia, on the same parallel?

Ladoga, the largest lake of Europe, is situated in the north-western part of Russia. The Neva R. is its outlet.

Riga, an important commercial city, is on the Duna R. five miles from its entrance into the Gulf of Riga.

Valdai Hills, a range of low hills, forming the principal water-shed of Russia.



CHAPTER XIII.

THE GERMAN EMPIRE, DENMARK AND HOLLAND.

Passing south from the Gulf of Riga, we soon come to the boundary line between Russia and Germany. Before proceeding farther on our journey it will be profitable to learn a few rules for the pronounciation of German names. The following list is submitted:

German *a* has the sound of *a* in *father*.

“ *e* “ “ *a* “ *fate*.

“ *i, y* and *ie* “ *e* “ *scene*.

“ *u* “ “ *oo* “ *boon*.

“ *ei, ai* “ “ *i* “ *time*.

“ *au* “ “ *ow* “ *brow*.

“ *eu, äu* “ *oi* “ *noise*.

“ *th* “ “ *t* “ *hat*.

“ *v* “ “ *f* “ *life*.

“ *w* “ “ *v* “ *move*.

“ *z* “ “ *ts* “ *gets*.

“ *ch* is a stronger aspirate than English *h*.

“ *h* is silent except at the beginning of a word.

These simple rules, if properly learned and used, will enable one to pronounce correctly nearly all names found in the ordinary geography; but it must be remembered that many German names have become *Anglicised*, and may be pronounced according to the rules which govern the pronounciation of English names.

Konigsberg or Koenigsberg, “the king’s hill,” is an important city of northeastern Germany. It exports large quanti-

tities of hemp, flax, tow and timber; and is one of the most strongly fortified cities of Germany.

Bay of Danzig, an arm of the Baltic Sea.

Vistula, an important river of northern Europe, rises among the Carpathian Mountains, flows northwest into the Bay of Danzig.

Danzig, the principal grain market of Germany, on the Baltic, is situated on the left bank of the Vistula, three miles from its mouth. Canals intersect many of its streets, and many of its houses stand on piles. It is a strongly fortified city.

Warsaw, formerly the capital of Poland, is now an important city of Russia, on the Vistula R. It has valuable manufactories for woolen and linen fabrics, and numerous tanneries, breweries and distilleries. Pop. 302,475.

Cracow, an important city of Austria, is situated on the left bank of the Vistula R. It is an important grain market, and in its vicinity are valuable mines of coal, zinc and salt.

Oder River.

Stettin, a noted maritime city of northern Germany, is on the Oder R. It has extensive ship yards, machine shops, potteries and breweries, and is the Baltic seaport of Berlin.

Breslau, one of the leading grain and wool markets of Germany, is also on the Oder R. It is a railroad center, and is surrounded by rich mining and agricultural districts. Pop. 240,000.

Lubeck, the oldest city on the Baltic, is situated on the Trave R., ten miles from the Baltic. It has considerable commerce, and many ship yards and factories.

Passing out of the Baltic Sea by the same route we entered, we first come to The Sound, near the south end of which is

Copenhagen, the capital of Denmark, on Seeland Island. Its position at the gate of the Baltic has made it a great commercial center. One-fourth of the industries of Denmark, and one-eighth of its population are centered in Copenhagen. Pop. 200,000.

Continuing our journey we pass through the Cattegat and Skager Rack Channels into the North Sea, stopping only to notice Cape Skagen, the northern point of Denmark.

The Kingdom of Denmark occupies the northern half of the peninsula of Jutland, and several of the adjacent islands. It is bounded on three sides by water, and on the south by Germany.

The water-shed extends north and south nearly in the center; but there is not room for rivers of any importance to commerce.

The soil on the west slope is very sandy, and poorly fitted for agriculture. The east slope is more fertile, but the climate is not so mild and even as on the west. Denmark is an agricultural country; for notwithstanding its natural sterility, it is made to yield large crops by means of fertilizers and careful tillage. Much attention is also given to the raising of live stock.

Sailing south on the North Sea we soon come to the

Elbe River, which rises in Bohemia, and flows northwest into the North Sea.

Hamburg, the foremost city of the continent in commerce, and next to Berlin the most populous city of Germany, is situated on the Elbe R., sixty-five miles from its mouth. The tide enables the largest vessels to ascend to the quays and docks of the city. Hamburg is the capital of a small independent state, which has an area of 157 square miles. Pop. 275,000.

Havel R. is a tributary of the Elbe, and it is connected with the Oder by canal.

Potsdam, the summer residence of the kings of Prussia, is situated on the Havel. Its environs abound in royal palaces.

Spree R., a small tributary of the Havel.

Berlin, the capital of Prussia and all Germany, is situated on the Spree R., in latitude $52^{\circ} 45'$. In 1876, it had a population of 1,059,519, and at present it probably ranks with New York, Peking, Tokio and Vienna. Its manufactures are

numerous and varied, and give employment to sixty thousand persons. It has famous buildings and streets, among the latter is "Unter den Linden," one of the finest in Europe. The University of Berlin has in attendance 2600 students.

Magdeburg, a very strongly fortified city, is situated on the great bend of the Elbe.

Halle, the seat of one of the principal universities of Germany, is on the Saale R. which flows into the Elbe from the southwest. The city is indebted for its existence to the rich salt mines in its vicinity.

Leipzig, one of the leading cities of Germany, is southwest of the Elbe. It is the center of the German book trade, and its university is attended by 3000 students. It is the center of an extensive railroad system, and is noted for its great fairs, which are attended by merchants from all civilized countries.

Dresden, the capital of Saxony, is situated on both sides of the Elbe, and is regarded as the most pleasant city in Germany. "Dresden abounds in museums, the state alone possessing thirteen, every one of which teems with treasures of art. The gallery of paintings is the richest of Germany, and one of the most famous in the world." The surrounding country is frequently spoken of as the "Switzerland of Germany."

Prague, the capital of Bohemia, "is one of the finest cities of the world." It is on the Moldau River, a branch of the Elbe. Next to Vienna and Buda-Pesth, it is the most populous city of the Austrian Empire. Pop. 223,000.

Weser, a river of northern Germany.

Bremen, one of the free cities of Germany, is situated on both banks of the Weser. It is the capital of the Republic of Bremen, which has an area of 97 square miles, and is at present a part of the German Empire. More emigrants come from Bremen to the United States than from any other German port.

Brunswick, the capital of a duchy of the same name, is situated on one of the eastern tributaries of the Weser.

Hanover, capital of the Province of Hanover, is on a tributary of the Weser. It is noted for its cotton mills, dye works, chemical works, foundries and machine shops.

Harz, a celebrated group of mountains, between the Weser and Elbe, noted for silver, lead and iron mines.

Sailing west from the Weser River we reach Holland, and here notice

Zuider Zee, "South Sea," an arm of the North Sea.

Amsterdam, the largest city of Holland, is built on ninety islands, in an arm of the Zuider Zee. The different parts of the city are connected by three hundred and fifty bridges. Canals pass through all parts of the city, and almost all of them are bordered by two wide streets and two rows of linden trees. The houses are nearly all built on piles, and very high. This is the leading commercial city of Holland. Diamond cutting is the chief industry of the city. Pop. 300,000.

Leyden, a city of great historical importance, is situated on the Old Rhine. It is the seat of the principal university of Holland.

Utrecht, a famous old city, noted for several treaties made there, is situated on the Old Rhine.

The Hague, the capital of Holland, "is a city half Dutch and half French, with broad streets and no canals; vast squares full of trees, elegant houses, splendid hotels, and a population mostly made up of the rich, nobles, officials, artists and *literati*." It is situated near the North Sea.

Rotterdam, the most thriving city of Holland, is situated on the Maas R. In commercial importance it is second only to Amsterdam. Broad and long canals divide the city into many islands, united by bridges. On each side of every canal extends a street, flanked by trees on one side and houses on the other. The canals are wide and deep, and covered with ships and barges of all descriptions.

Holland is one of the smaller countries of Europe, and looks out upon the North Sea from which much of its soil had to be

won. The southeastern part of the country rises to an elevation of 700 feet above the sea level; but much of Holland is below the level of the sea, consequently wherever the coast is not defended by sand banks, it has to be protected by dykes.

Some of the rivers lost themselves in swamps and marshes which covered much of the country. Channels were made for these rivers, in which they were confined by strong embankments, or dykes, placed along their sides. Lakes were drained, or rather they were *pumped* dry, and converted into fertile farms. This was done by building dykes around the lakes, erecting windmills on the dykes, and pumping the water into canals that carried it to the rivers. The windmill is peculiarly a Dutch "institution." By its aid the people have changed a land that was "fit only for seals and beavers" into one of the most fertile and wealthy in Europe. The windmill is found on the dykes along the ocean, on the dykes bordering the rivers, and on the dykes surrounding the "polders," or reclaimed lakes. Without it there could have been no Holland.

"Over the whole country extends an immense network of canals, which serve both for the draining of the land, and as a means of communication. The cities, by means of canals, communicate with the sea; canals run from town to town, and from them to villages, which are themselves bound together by these watery ways, and are connected even with the houses scattered over the country; smaller canals surround the fields and orchards, pastures and kitchen gardens, serving at once as boundary wall, hedge, and roadway; every house is a little port. Ships, boats, rafts move about in all directions, as in other places carts and carriages. The canals are the arteries of Holland, and the water her life blood."*

Travelers have much to say of the sights that may be witnessed on these canals. Sometimes a large boat is towed by a man, sometimes by a man and woman, sometimes by a woman and cow harnessed together, and sometimes by a woman

*De Amicis.

alone. Many of the people live in boats throughout the year.

The Rhine River, after entering Holland, soon divides, the southern and principal arm taking the name Waal, and uniting with the Maas above Rotterdam. The northern arm is known by the name Rhine, until it divides, when the southern or main arm takes the name Leck, and that also unites with the Maas; while the northern arm, known as the Old Rhine, passes through Utrecht and Leyden to the North Sea. The Maas is known in France as the Meuse.

Holland is a commercial nation, but it pays much attention to agriculture. The principal crops are wheat, rye, barley, beets, tobacco, flax and hemp. Dairying is carried on extensively.

The grand duchy of Luxemburg belongs to the Dutch monarch.

We will suppose that the next lesson to be assigned is on the Rhine River, and that you have so prepared yourself for the work that you are independent of the text-book. Each pupil has his atlas open at the map that best shows the river. With chalk in hand you step to the blackboard and show the position and direction of the Alps Mts., where they form the boundary between Switzerland and Italy. Fix the position of the mountain knot of Saint Gothard, and tell the class that the Rhine R. rises in an icy cave amidst its fastnesses. Then sketch the river on the board, and have the pupils follow the maps in the books, being ready at any moment to tell what important place on the river you are at, or near, in your sketching. If any book does not show some important place that you wish to give as a part of the lesson, indicate its position on the sketch, and let the pupil fix its location on the map in his book. Show that the Rhine flows first to the northeast, then north between Switzerland and Austria, into Lake Constance, on which border Switzerland, Austria and Germany. Call attention to the shape of the lake, and notice that the river flows out of the southern one of the two horns at the

west end. The Rhine then flows to the west, with Germany on the north, and all of Switzerland, except one canton, on the south. About midway between the lake and the great bend, the Aar River comes in from the south. Pass up the Aar and call attention to the two lakes, Zurich and Lucerne, that discharge their waters into the Aar; and notice the city of the same name at the foot of each lake. If you think it advisable, say a few things about the thousands of tourists who visit these cities and lakes every summer. Ascending the Aar you will soon come to the outlet of Lake Neufchatel. This lake is next to the largest in Switzerland; on its west shore is the city of Neufchatel, the birthplace of Professor Guyot, the eminent geographer. Farther up the Aar is Bern, the capital of Switzerland; and the source of the river is found on the slopes of Mount St. Gothard. Call attention to the fact that the great bend in the Aar is caused by the Jura Mts. Going west on the Rhine you will soon come to Basel on the great bend of the river, and in the northwest corner of Switzerland. From here the Rhine flows a trifle east of north, for quite a distance. Descend the river, calling attention to its principal tributaries, cities and bends, giving such information about the cities and the country on either side of the river as you may think best. By following the plan here indicated, and noting the following places, it is believed that the study of the Rhine may be made of value to the pupils.

Basle, or Basel, an important commercial city, is situated on the great bend of the Rhine; it has manufactories for chemical products and silk.

Strassburg, the capital of Alsace, is situated on the Ill River, near the west bank of the Rhine. The Germans recovered the city from the French in 1870. The cathedral of Strassburg is noted for its beauty and the height of its spire.

Baden is a famous watering place east of the Rhine; it is indebted to its springs altogether for its prosperity.

Carlsruhe, "Charles's rest," the capital of the grand duchy

of Baden, is an important railroad center, four miles east of the Rhine.

Mannheim, an important commercial city, is situated at the confluence of the Neckar with the Rhine.

Heidelberg, noted for its University, is on the Neckar River.

Worms, noted for many famous diets held there, is situated on the west bank of the Rhine.

Main, a very crooked river of Germany, flows into the Rhine from the east, at one of the great bends of that river.

Frankfort-on-Main, one of the old free cities of Germany, is situated on the Main R., twenty miles from its junction with the Rhine. Frankfort was the seat of the German Diet; it is at present one of the great money marts of Europe.

Mainz, a famous military station, is situated on the Rhine, opposite the mouth of the Main.

Coblenz, the capital of Rhenish Prussia, is situated at the junction of the Moselle River with the Rhine. Across the Rhine from Coblenz is Ehrenbreitstein, the strongest fortress in Germany. Ehrenbreitstein is connected with Coblenz by a bridge of boats. It is built on a rock 490 feet high, and is inaccessible but from one side. It has cisterns sufficient to hold a supply of water for its garrison and inhabitants for three years in case of a siege.

Metz, a garrison town of Germany, taken from the French in the late Franco-Prussian War, is situated on the Moselle R. It has much decreased in population since its annexation to Germany.

Moselle R. rises on the west slope of the Vosges Mts.

Bonn, noted for its university, is situated on the west bank of the Rhine.

Cologne, the most populous city of Rhenish Prussia, is situated on the west bank of the Rhine. It is noted for its commerce, chemical works, machine shops, and for its manufacture of perfumery and pottery. Pop. 155,000.

It is not necessary to descend the Rhine any further at this time, as the remaining towns of importance on the river have been taken in connection with the work on Holland. But attention should be called to them, that the children may be able to see the river from its source to its mouth.

We have visited all of the important towns of Germany, excepting Aix-la-Chapelle, which is situated on a branch of the Meuse, and noted for being the capital of Charlemagne's empire; and Munich, the capital of Bavaria, in the basin of the Danube R. It is possible that more places have been noticed than can be studied profitably by the class in the allotted time; if so, reduce the number by leaving out the less important ones. Have the class sketch the Rhine.

The German Empire, constituted in 1871, consists of four kingdoms, six grand duchies, five duchies, seven principalities, three free cities, and Alsace-Lorraine, which was recovered from France in 1870. It contains an area of 209,148 sq. mi., and a population of 42,727,360.

See that its boundaries are correctly given.

The surface of Germany slopes to the north. It is naturally divided into four divisions,—the high region in the south, consisting of the ranges of the Alps and their ramifications; the region of the high plateaus north of the Alps; the mountainous region of central Germany, consisting of low mountains and narrow valleys; and the low plain along the Baltic and North Seas. This plain is so low in places that dykes have to be built to protect it from inundation.

The climate of Germany is cold-temperate, there being but little difference between the climate of the north and that of the south, owing to the elevation of the southern part of the country.

The principal crops are rye, wheat, barley, flax, hemp, potatoes, sugar-beet, hops, tobacco, and the vine. Germany has about 310,000 acres of vineyards. In former years grain was exported, but at present the country is not able to supply its own wants, and has to import wheat, rye and barley.

“Many of the farm houses of Northern Germany are built of brick, one story, and either thatched with straw or reeds, or covered with tiling. They are often a hundred feet in length, forty or fifty feet in width, and the roof very steep, so that fifty or sixty tons of hay, with rye, wheat and oats can be stowed away in the attic. There is no chimney in the house, and the smoke, when the weather is not too cold, escapes at the front door. The floor, except in the bedrooms, is paved with small, round stones, or else is made of cement. Large hams and sides of bacon hang from the upper ceiling, and no other smoke-house is needed. These houses are not generally scattered over the country at great distances, but, rather, grouped together in villages;*” the owners are usually quite wealthy.

Germany is rich in coal, iron, zinc, lead and copper mines. It ranks next to England and the United States in its iron works. In addition to iron and steel, it is also extensively engaged in the manufacture of linen, cotton and woolen goods. Its glass works and potteries are very important, but are far surpassed by the products of its breweries and distilleries.

The Germans are a polite people, and, especially in Prussia, a well educated people. The upper classes are well posted in the history of their own country, and take a lively interest in the affairs of other nations. But the lower classes have a hard struggle to keep want from the door; it taxes all their energies to obtain a livelihood. “Among the poor the women take their full share of labor in the field. They reap, and mow, and cradle, and rake, and pitch hay just like the men. They carry heavy burdens by means of neck-yokes, and carry heavy loads of manure up the steep hills to enrich the vineyards. They plow in the field with horses and oxen, and perform a vast amount of drudgery that we should never think even men ought to do.”

* “Letters from Europe and America.”—Bishop Kingsley.

As a review of the work on Germany, and as a test of the accuracy and fullness with which they have done the work, have the pupils arrange the points studied, in the form of a scheme. The scheme for England will answer as a model.



CHAPTER XIV.

BELGIUM, FRANCE, SPAIN, PORTUGAL AND SWITZERLAND.

The lower course of the Maas is in Holland, and has already been studied. If we ascend the river beyond the confines of that country, we shall be traveling on the boundary between Holland and Belgium for some distance, beyond this the latter country lies on both sides of the river, which, in its upper course, takes the name of Meuse. The first city of importance that we come to is

Liege, a mining and manufacturing city, situated in rich coal and iron districts. Firearms are the principal manufactures.

Namur, a city of historical importance, is on a great bend of the Meuse River.

Antwerp, the second city of Belgium in population, is, next to Hamburg, the most important maritime city of continental Europe. It is situated in Northern Belgium on the Schelde River, and is noted both for its commerce, and for the manufacturing of silks, velvets, leather, spirits, and soap.

Brussels, the capital and largest city of Belgium, is in the basin of the Schelde, some distance south of the river. It is noted for its manufactures of fine laces, carpets, linens, silks, cottons, ribbons, machinery, and mathematical instruments. Population 364,327.

Waterloo, famous for the victory gained June 18, 1815, over the French, by the allied armies commanded by the Duke of Wellington, is situated nine miles south of Brussels.

Ghent, the third city of Belgium in population, is situated in the northwestern part of the country, on the Schelde. Rivers

and canals divide the city into twenty-four islands. The tide ascends the river to its quays, giving it superior advantages for commerce. It is also connected with the North Sea by a ship canal. Ghent is extensively engaged in manufacturing cotton and woolen goods.

The Schelde River rises in France and flows northeast, east, and north into the North Sea.

Bruges, formerly a city of great commercial importance, is rapidly going to decay, owing to its lack of a good outlet to the sea.

Ostende, the second port of Belgium, has an extensive commerce, and is the seat of valuable fisheries.

Belgium—Is one of the smallest countries of Europe, and the most densely populated.

With the exception of a few hills in the southeast, the surface is low and flat. The basins of the Meuse and Schelde comprise nearly the entire country.

The soil is carefully cultivated and made to yield large crops of wheat, rye, oats, flax, hops, potatoes, hemp, and tobacco.

Owing to the abundance of coal and iron in the country, manufacturing is carried on very extensively. The chief articles made are fire arms, cutlery, cotton and linen goods, carpets, machinery, and paper.

The majority of the Belgians speak the Flemish language, quite a number speak the German, but "French is the language of Government, of the army, of commerce, industry and science."

Lille, or *Lisle*, is in the northwestern part of France. It is the principal seat of the French linen and cotton manufactures. Calicoes, fine linen cloths, thread, and ticking are its principal productions.

Calais, a fortified seaport of France, is situated on the Strait of Dover. 200,000 travelers cross the Strait from Dover to

Calais, annually. It is proposed to dig a tunnel from Dover to Calais.

Boulogne, an important seaport, is situated south of Calais, on the English Channel.

Le Havre, the principal port of Western France, is situated at the mouth of the Seine River. It is a seat of commerce, and its docks and quays are on a vast scale. "Lines of steamers connect it with Northern Europe, the Mediterranean, and America."*

Seine River rises in the eastern part of France and flows northwest into the English Channel. Ascending the river from Havre, we have

Rouen, the principal cotton manufacturing city in France. It is the birth place of La Salle.

Paris, the capital of France and of the fashionable world, is situated on both banks of the Seine River, in latitude 49° N.; hence, it is on the same parallel as the northern boundary of the United States, west of the Great Lakes, and as the mouth of the St. Lawrence River. "No other city of the world offers equal attractions to persons of the most varied tastes. Paris consists of a hundred distinct cities welded into one, and yet, as a whole, it is full of individuality." It is the most important commercial city of France, and has various and important manufactures. Population 2,500,000.

Versailles, the most important and sumptuous suburb of Paris, is situated ten miles southwest of that city.

Returning to the English Channel, and sailing westward we come to

Cherbourg, one of the great naval arsenals of France, situated on the peninsula of Normandy. The Alabama, a Confederate privateer, was sunk off the harbor of Cherbourg in 1864 by the Kearsarge.

*Harper's Magazine, Dec. 1882, contains a valuable article on Le Havre.

The *Channel Islands* are situated between the peninsulas of Normandy and Brittany, and belong to Great Britain. The principal ones are Alderney, Guernsey and Jersey; all are famous for their cattle and fisheries.

Brest, next to Toulon the greatest naval arsenal of France, is situated on the peninsula of Brittany. Brest is connected with the little town of Duxbury in Massachusetts by a telegraph cable.

Call attention to the numerous fortified places on both sides of the English Channel.

Bay of Biscay.

Loire, one of the principal rivers of France, rises among the Cevennes Mountains, flows west of north for a large part of its course, and then west into the Bay of Biscay.

Nantes, one of the great commercial cities of France, is situated on the Loire near its mouth. Historically the name of the city is connected with the "Edict of Nantes," issued in 1598.

Tours, one of the most pleasant towns of France, is situated on the Loire. It has an extensive trade in corn, wine, brandy, and dried fruits.

Orleans, a great historical city of France, is situated on the great bend of the Loire. "Upon the fate of Orleans frequently depended that of all France; the names of Cæsar, Attila, Joan of Arc, and De Guise record the sieges it has sustained."

St. Etienne, "the Pittsburg of France," is situated on a small tributary of the Upper Loire. It owes its prosperity to the vast coal-fields by which it is surrounded. The atmosphere of the city is filled with coal dust, and the streets and houses are covered with it. There are extensive manufactories for iron ware of every description, and silk ribbons. East of it are the Cevennes Mountains; west, the Auvergne.

La Rochelle, a city of historical importance.

Gironde, an estuary formed by the union of the Dordogne and Garonne Rivers.

Bordeaux, the third port of France, is on the Garonne River. It is surrounded by the great wine-growing regions of France, and its chief exports are wines, brandies and fruits.

Toulouse, southeast of Bordeaux, on the Garonne, owes much of its prosperity to its position midway between the Atlantic and Mediterranean.

The *Garonne* rises on Spanish soil, on the southern slope of the Pyrenees, and after a subterranean course of two and a half miles, it appears on the northern slope of the mountains. It is connected with the Mediterranean by the canal of Languedoc. Small vessels can go through France to the Mediterranean by way of this river and canal.

Noticing the city of Bayonne in the southwestern part of France, we come to the Spanish frontier. The Pyrenees form the boundary between France and Spain. Before passing into Spain, the class should have a clear mental picture of the western coast of France, and should transfer the picture to the blackboard by placing thereon a sketch showing the shape of the coast and the position of all places learned in connection with it.

Spain and Portugal.—The *Cantabrian Mountains* extend west from the Pyrenees to the northwestern part of Spain.

Cape Ortegal, the northwestern point of Spain.

Ferrol, in the northwest corner of Spain, is a great naval station and fortress, "bristling with guns and containing arsenals and dock-yards."

La Coruna, a commercial and manufacturing city, is south from Ferrol. It was from here that the "Invincible Armada" started out on its disastrous expedition.

Passing south along the west coast of the peninsula we soon come to

Cape Finisterre, the western point of Spain.

The *Minho* is a small river forming a part of the boundary between Spain and Portugal.

Douro rises in the north-central part of Spain and flows west into the Atlantic.

Oporto, the second city of Portugal in population and commercial importance, and the first in manufactures, is situated on the Douro, a short distance from its mouth. The country around Oporto is largely engaged in the cultivation of the vine, and the city has given its name to a variety of wine.

Valladolid, formerly the capital of Spain, is situated on the Douro River. Columbus died here.

Tagus rises in the eastern part of Spain and flows southeast into the Atlantic.

Lisbon, situated on the Tagus, is the capital and largest city of Portugal. The city and its suburbs extend nine miles along the river, and two miles inland; it is built on seven hills. It has suffered severely from earthquakes; the greatest destruction was in 1755. Population 253,000.

Toledo, the "mother of cities," and one of the most pleasant cities in Spain, is situated on the Tagus. It is famous for the manufacture of swords.

Madrid, situated on a small tributary of the Tagus, is the capital of Spain. The city is in the midst of the most barren district in the country, and its climate is very unpleasant. The museums of Madrid are among the richest in Europe. Population 400,000.

Cape St. Vincent, the southwest point of Portugal.

Guadiana, a river of Spain and Portugal, rises in the eastern part of Spain, and flows southwest into the Atlantic. It forms some of the boundary between the two countries.

Palos is a small town east of the mouth of the Guadiana. Columbus sailed from here on his first voyage of discovery in 1492.

Guadalquivir is the only river of Spain that is navigable for quite a distance.

Seville, situated on the *Guadalquivir*, is noted for the manufacture of silks and stuffs interwoven with gold.

Granada, on a small tributary of the *Guadalquivir*, was the capital of the Moorish Kingdom. In the city is the *Alhambra*.

Cordova, the "nursery of science," is situated on the Upper *Guadalquivir*. Under the Moors it contained 1,000,000 inhabitants, and had the largest university of the world.

Cadiz, an important commercial city of Spain, is situated on a small island near the coast.

The *Strait of Gibraltar* is about fifteen miles wide in the narrowest part.

Gibraltar, on the north side of the strait, is the strongest fortification in the world. At the base of the fortress is the city of *Gibraltar* which has considerable commerce. Both fortress and town belong to Great Britain.

Mediterranean Sea, 2,000 miles long.

Malaga, situated on the *Mediterranean*, is one of the leading commercial cities of Spain. Its principal exports are raisins, almonds, figs, lemons, oranges, wine, olive oil, etc.

Valencia, the fourth city of Spain in population, is on the east coast of Spain. Its commerce is very extensive. East of *Valencia* are the

Balearic Islands, which belong to Spain.

Port Mahon, on the island of *Minorca*, is the largest city on the *Balearics*.

Ebro River rises in North-central Spain, and flows southeast into the *Mediterranean*. Its valley is a triangle with the apex to the northwest.

Saragossa, "heroic *Saragossa*," on the *Ebro River* is of historical importance.

Barcelona, situated in the northeastern part of the country, on the *Mediterranean*, is the great pleasure city of Spain. It

is the principal commercial city of the nation, and the province of Barcelona is the chief seat of industry in Spain.

Pyrenees Mountains.

In passing around the peninsula call attention to the parallelism of the rivers flowing into the Atlantic. Show that in going north or south through Spain, mountain chains and river basins will be found alternating. In traveling north from Malaga the order will be Sierra Nevada, basin of the Guadalquivir, Sierra Morena, basin of the Guadiana, Sierra de Toledo, basin of the Tagus, mountains of Castile, basin of Douro, and the Cantabrian Mountains. All of these ranges are connected with the range that separates the basin of the Ebro from those already named.

The peninsula produces the ordinary cereals in abundance where the rainfall is sufficient, or irrigation can be resorted to successfully. But owing to the lack of moisture, parts of Spain are not very productive. Many of its productions have already been named in connection with the cities; review those.

Both Spain and Portugal are rich in minerals, especially, iron, copper, lead, coal and mercury. Cork is a product of both countries.

In sketching the peninsula your pupils will be aided by having their attention called to the fact that the following distances are about equal; from Barcelona to Cape Nau, from Cape Nau to Cape de Gata, from Cape de Gata to Gibraltar, and from Gibraltar to Cape St. Vincent; and that each is about equal to half the distance between Cape St. Vincent and Cape Finisterre.

Resume the study of France by beginning at the source of the Rhone, and descending the river. The Rhone rises in one of the principal glaciers of Europe, near Mount St. Gothard; and its flow is modified by two hundred and sixty other glaciers. Sketch the river and its belongings as you did the Rhine,

showing where the principal tributaries flow in, and the position of the principal cities. As you begin the sketch, call attention to the position and direction of the Rhine and Aar, with reference to the Rhone, by sketching them a short distance. The river flows southwest through Switzerland, in a narrow valley, between two of the principal ranges of the Alps. About one-third of the distance from the source of the river to the sharp bend from which it flows northwest into Lake Geneva, is the Simplon Pass, over which Napoleon Bonaparte made a great military road twenty-six feet wide; it connects Switzerland with Italy.

South of the sharp bend already referred to, is the Great St. Bernard Pass, famous for the monastery and its dogs.

Lake Geneva, the largest lake in western Europe, is in the form of a crescent.

Lausanne, an important commercial city, is situated on the north side of Lake Geneva. It is also a famous summer resort.

Geneva, the largest city of Switzerland, is situated at the western extremity of Lake Geneva, on both sides of the Rhone. Its principal manufactures are watches, music boxes, and jewelry.

Shortly after the Rhone leaves Lake Geneva, it receives the Arve River from the southeast. The Arve has its origin in the *Mer de Glace*, "sea of ice," the most famous glacier of Europe. This glacier is situated on the slopes of Mount Blanc, and slides into the valley of Chamouni, at the annual rate of 328 feet.

Mount Blanc, the highest point of Europe, is situated south of the east end of Lake Geneva, at the junction of France, Italy, and Switzerland. It is 15,810 feet high.

Before leaving Switzerland, review thoroughly all that has been learned concerning it. Be certain that your pupils can see it as a whole, and see its position with respect to the surrounding countries.

Picture its grand mountains, beautiful lakes and swift-flowing rivers. Show that while its mountains forbid farming on a large scale, they bring into the country crowds of tourists, out of whom the inhabitants make a plentiful harvest.

Switzerland is a Federal Republic, consisting of twenty-two cantons.

There is no Swiss language. The German is spoken in the north and east, the French in the west, the Italian in the south.

On leaving Lake Geneva, the Rhone flows west a little, and then makes a great bend, being forced south by the Jura Mountains, which extend northeast from this point to the mouth of the Aar River. From the great bend, the Rhone flows west until it meets the Saone from the north, and then south to the Gulf of Lyons. The Saone rises in the Vosges Mountains and flows south.

Lyons, at the junction of the Soane and Rhone, is the great center of the silk industry. In 1872 there were 120,000 looms within a short radius of Lyons. Most of the weavers work at their own homes in the neighboring villages and country instead of being congregated in large establishments.

About one-third of the distance from Lyons to the Gulf, the Isere River comes in from the east. On it is Grenoble, noted for its leather and fortifications. The Isere is formed near Grenoble by two streams which come down from the Alps. One of these rises in the Cenis Pass, which has a railroad tunnel eight miles in length running through it. and leading into Italy.

Avignon, near the confluence of the Durance and Rhone, was for a time the residence of the Popes, and is at present noted for the manufacture of silk and agricultural implements.

The *Rhone* flows into the Gulf of Lyons.

Which is the greater, the distance from the source of the river to Lyons, or that from Lyons to the mouth of the river?

Compare the lakes through which the Rhone and Rhine pass, and the great bends at Lyons and Basel.

Marseilles, the leading commercial port of the Mediterranean, is situated on the Gulf of Lyons, east of the mouth of the Rhone. Upwards of 10,000 large vessels and steamers enter its harbor yearly. Its sanitary condition is bad.

Toulon is the great naval station of France in the Mediterranean.

Nice, the "Victorious," is noted for its salubrious climate.

Monaco, a city and principality, noted for its gambling houses.

Review all that has been studied about France, and have the pupils make a sketch of the country. When the sketch is finished let them name the surrounding countries and waters.

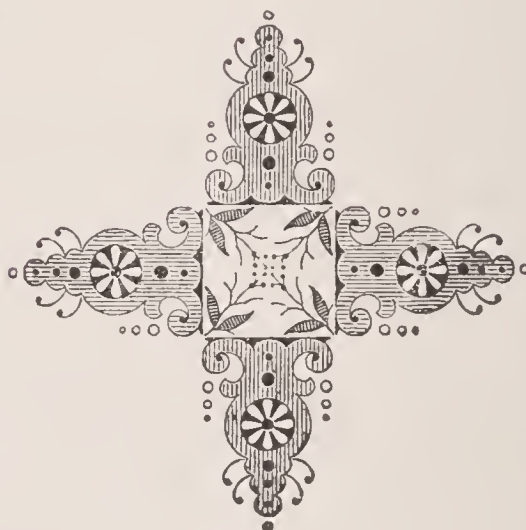
If the work so far has been done fairly, much has been learned about the surface. The Pyrenees on the south, the Alps, Jura and Vosges on the east, have been studied, and their influence upon the surface noticed. It was found that the Cevennes Mountains separated the basin of the Rhone from that of the Loire, and that the latter was separated from the basin of the Gironde by the Auvergne Mountains. And the general direction of the rivers shows that all of France, west of the basin of the Rhone, slopes to the northwest.

The mineral wealth of France is small, considering the size of the country. None of the precious metals are found within its borders. The coal mined does not supply the home demand. The iron ores are important, but are unfortunately at a great distance from the coal-fields. Lead is found in large quantities. Building materials of all kinds are abundant "and most of the towns are built of solid stone."

France is one of the leading manufacturing countries of the world. The great centers of industry are Paris, Lyons and Lille. "Wherever coal mines are opened factories spring up

over night.” “The textile industries alone occupy more than 2,000,000 hands. The silks of France are the best in the world; in woolen stuffs, cloth, carpets, and flannels it successfully competes with England; whilst in cottons it excels in quality, if not in quantity.”

France is a Republic.



CHAPTER XV.

ITALY, MONTENEGRO, GREECE, AND TURKEY.

In sailing east from France along the coast of Italy, the first place of importance we reach is

Genoa, the birthplace of Columbus, situated on a gulf of the same name. It is the busiest port of Italy, and has manufactures of macaroni, paper, silks, velvets, jewelry and soap.

Pisa, on the Arno River, is noted for its leaning tower. Get a picture of this tower in cyclopedia or natural philosophy. Pisa is in the midst of a rich agricultural country, and its university is one of the best in Italy.

Florence, the "city of flowers," is situated on the Arno. Its art galleries and museums are among the richest in Europe. These, with its beautiful monuments, attract to it lovers of art from all quarters of the world.

Leghorn is situated south of the Arno, and is noted for its straw goods.

Elba, an island belonging to Italy, is situated near the coast. Napoleon was banished there, but remained only a short time. The island is noted also for its rich deposits of iron ore.

Island of Corsica belongs to France. Napoleon Bonaparte was born here Aug. 15, 1769.

Island of Sardinia belongs to Italy.

Tiber, the principal river of Central Italy, rises on the western slope of the Apennine Mountains and flows southwest into the Mediterranean. It is navigable only a short distance.

Rome, the capital of Italy, is situated on the Tiber River. It is the residence of the Pope, and may be termed the capital of the Catholic world. It contains 365 churches, the principal

one of which is St. Peter's Cathedral, which cost \$100,000,000, and is the largest religious edifice in the world. Rome has no port, and may be justly said to have no immediate vicinity, owing to the unhealthfulness of the surrounding country. North of the city is the Roman Campagna extending from the sea to the mountains, and covering an area of 600,000 acres. This region was at one time carefully cultivated, and dotted with towns and rich villas, now it is exceedingly unhealthy, and not a village or hamlet is to be seen on its broad surface. South of the city are the Pontine Marshes, which are as unhealthy as the Roman Campagna.

Naples, "new city," is situated on the beautiful Bay of Naples. It is the most populous city of Italy, and ranks next to Genoa in commercial importance. Its university is one of the oldest and best in Italy. Population 462,000.

Mount Vesuvius, an active volcano, is southeast of Naples. At its western base are the "buried cities," Pompeii and Herculaneum.

Strait of Messina separates the island of Sicily from the mainland.

Mount Ætna, on the east end of the island of Sicily is a famous volcano.

Syracuse, a city on the east end of Sicily, is of historical importance.

Palermo, the capital of Sicily, is on the northern coast, and noted for the beauty of its situation.

Malta, a small island in the Mediterranean, is south of Sicily; it belongs to Great Britain, and is very strongly fortified. Valetta is its capital.

Gulf of Taranto is south of Italy, and forms the hollow of the "boot."

Strait of Otranto.

Brindisi, near the southern end of Italy, is the European terminus of the overland route to India and the East.

San Marino, a small republic in Italy, is very mountainous, and has an area of 22 square miles. Its insignificance has been its salvation; it is now under the protection of Italy.

Bologna, one of the principal railroad centers of Italy, is situated on the Reno River. It has manufactures of crape, chemical products, musical instruments, silks, and sausages. Its university is one of the oldest in Europe.

Ascending the Po River, which is on about the same parallel as the north end of New York and Vermont, we notice the great number of its tributaries. Several of those that come from the north drain long, narrow lakes of wondrous beauty, that nestle among the spurs of the Alps. The largest of these lakes is Garda, which has for its outlet the Mincio River. On the Mincio is

Mantua, one of the historical cities of Italy.

Modena and *Parma* are situated on two small streams that flow into the Po from the south. Both cities are manufacturing centers.

Como, a beautiful lake situated west of Lake Garda; on it is a city of the same name, which has become a famous summer resort.

Milan, one of the leading cities of Italy, is situated in a beautiful plain north of the Po. It is a manufacturing city, and is noted for its cathedral.

Ticino, the principal tributary of the Po, rises on Mount St. Gothard and flows through Lake Maggiore.

Reivew briefly the other rivers rising on Mt. St. Gothard. Have the pupils make a sketch showing the position of the rivers; and have them, in thought, stand on the mountain and describe the course of each river on its way to the sea. Urge them to make their descriptions *vivid*, setting them the example yourself.

A railroad tunnel, ten miles in length, passes through the St. Gothard Pass, connecting Switzerland and Italy.

Turin, on the Upper Po, has extensive commerce and valuable manufactures of silks and woollens.

Venice, the "Queen of the Adriatic," is situated on eighty islands, and is intersected by 147 canals. A bridge of 222 arches and 2000 feet in length connects the city with the mainland. Venice has considerable commerce, and manufactures looking-glasses, laces, etc.

Sketch Italy, and when so doing fix its boundaries.

The surface of Italy may be divided into two grand divisions—the basin of the Po, and the long narrow peninsula on the south.

The basin of the Po is bounded on three sides by lofty mountains which in the spring send such quantities of water to the main river that frequently the valley is flooded, causing great destruction of property. To guard against the overflowing of its banks the Po is flanked by dykes and levees along much of its lower course; and yet, in the basin of the Po there is an area of 5,000 square miles that can be made productive only by means of irrigation.

The peninsular part of Italy is traversed throughout its entire length by the Apennines, which form its water-shed. The mountains are east of the center, hence the longest rivers and the largest plains of the "leg" of Italy are found on the west side of the peninsula.

On account of its position, and great length from north to south, Italy enjoys a varied and excellent climate, which permits the cultivation of all the common grains and fruits, and a variety of tropical products.

In the basin of the Po, wheat, oats, rye, barley, mulberry trees, and the common fruits and vegetables are grown. Olives, citrons, oranges and lemons thrive in the southern part of the peninsula and on the island of Sicily.

The manufactures have been spoken of in connection with the cities in which they are carried on.

Italy is rich in marbles, sulphur, borax, nitre, alum and alabaster; but has only a few metals, of which iron and lead are the principal ones.

Austria joins Italy on the east, and extends south along the eastern side of the Adriatic for a considerable distance. *Trieste*, the great commercial emporium of the Austrian Empire, is situated at the head of the Adriatic, east of Venice. Its streets are crowded with traders from all civilized nations, and in its harbor float the flags of the maritime world.

At the southern point of Austria is the principality of *Montenegro*, "black mountains," whose surface consists of a mass of grayish mountains cut by a few narrow valleys. It is entirely independent of Turkey, being recognized as a sovereign state by the great powers of Europe. *Cettinje* is its capital.

South of Montenegro, Turkey borders on the Adriatic.

Strait of Otranto.

Ionian Isles, of which the more important are

Corfu, the home of the current,

Cephalonia, the largest of the group, and

Ithaca, the home of Ulysses.

The importance of modern Greece is not such as to call for a thorough study of its geography. But probably the boys and girls will study the history of ancient Greece at some time in the near future, and it is well to lay a foundation on which to build that history; for without a knowledge of the geography of a country, it is *impossible* to understand its history fully.

Gulf of Lepanto almost divides Greece into two parts.

The *Morea*, or *Peloponnesus*, is the peninsula south of the Gulf of Lepanto.

Cape Matapan is the southern point of the mainland of Greece.

Sparta, anciently a very famous city, is situated on a small stream that flows into the gulf east of Cape Matapan.

Candia, or *Crete*, a large island south of Greece, is inhabited mainly by Greeks, but is under the government of Turkey.

Cyclades, a group of islands southeast of Greece and belonging to it.

Corinth is situated on the isthmus which connects the Morea with the rest of Greece.

Athens, the capital of Greece, and anciently the most famous city in the world, is situated inland a few miles.

Negropont is a long, narrow island east of Greece.

Marathon, a bay and plain east of Athens, opposite the south end of the island of Eubœa.

Thermopylae, a narrow pass between the mountains and the sea, is situated opposite the northwest corner of the island of Eubœa. The pass is noted for the stand made by Leonidas against the Persians, in 480 B. C.

In teaching the geography of Greece you will remember that its area was enlarged considerably in 1881. Its northern boundary is very irregular.

The surface of Greece is very mountainous, and on account of the difficulty of building roads, the different parts of the country have but little intercourse. The ordinary grains are raised, and tobacco, madder, figs and oranges can be cultivated profitably, while the quality of the olive oil of Attica and the wines of the Cyclades is as excellent as in the palmy days of Greece. But agriculture progresses slowly, only one-seventh of the area being under cultivation. Neither does manufacturing prosper, and the Greeks would be doomed to starvation if they did not keep a large number of merchant vessels in the carrying business of the Mediterranean.

Olympus, a mountain prominent in Greek mythology, is situated in the southern part of Turkey, west of the bay of Salonica.

Salonica, a city of Turkey, on a gulf of the same name, stands on the site of the ancient Thessalonica.

Peninsula of Mount Athos, the most eastern of the three tongues of land lying directly east of Salonica, "is the property of a republic of monks who govern themselves according to their own fancy. A company of Christian soldiers is stationed at the peninsula to prevent the sacred soil from being desecrated by the footsteps of a woman. No female has set foot upon the peninsula for fourteen centuries."

Maritza, a river of Turkey, rises in the Balkan Mountains, and flows into the Ægean Sea.

Adrianople, an important city of Turkey, is situated on the Maritza. It is noted for the manufacture of Attar of Roses.

Philippopolis, on the Maritza, is an important manufacturing town.

Balkan Mountains extend east and west through Turkey.

Strait of Dardanelles.

Marmora Sea, noted for the marble quarries on its islands, is situated between Europe and Asia.

Bosporus, a narrow strait, connects the Black Sea and Sea of Marmora.

Constantinople, or *Stamboul*, the capital and largest city of Turkey, is situated on the European side of the Bosporus, at its junction with the Marmora Sea. The "Golden Horn," an inlet of the Strait of Bosporus, forms an excellent harbor. The city is a great commercial center, but, like most Turkish cities, is rapidly declining in population and importance. Population 650,000.

Black Sea.

Balkan Mountains: connect them with the Alps.

The Balkan Mountains may be said to form the northern boundary of Turkey, as Bulgaria is almost independent, being assured of a Christian ruler, and protection by the Great Powers; while Bosnia is virtually, though not nominally, a

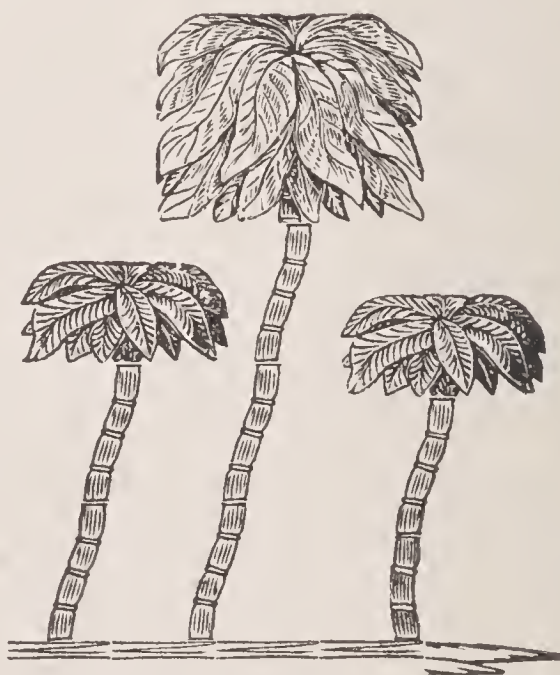
part of Austria-Hungary, that power having occupied it since 1878.

The surface of Turkey is diversified with mountain, plain, and valley. Nearly all of it is well fitted for agriculture, but that noblest of callings is carried on in a very primitive and slovenly manner; and a large portion of the country is covered with forests.

The principal crops are wheat, rye, oats and barley in the north; maize, cotton, olives, citrons and tobacco in the south. The leading minerals are iron, lead, salt, and marble, but none of these are mined in sufficient quantities to be of much benefit to the nation.

The manufactures of Turkey are varied, but are all on a small scale. Saddles, fire arms, swords, coarse woolen cloths, shawls, linen, and silks, are the principal products.

The ruler is styled Sultan. The inhabitants are of various races, the Turks constitute but a small portion. The Turks are Mohammedans.



CHAPTER XVI.

AUSTRIA, HUNGARY, SERVIA, BULGARIA, ROUMANIA AND RUSSIA.

Teach the geography of the Danube as you did that of the Rhine and Rhone. Beginning at its source, sketch the river, showing its principal tributaries and towns. As you are sketching the river call the attention of the class to any facts you wish to have learned in regard to the cities, country, or people. Have the pupils open their books at the map of the Danube, and notice its direction, prominent bends and chief cities, as you indicate them on the sketch. Of course, when reciting this lesson the next day, they should be able to place the sketch on the board without the aid of their books or maps.

Begin by placing on the blackboard a portion of the Rhine, showing the great bend at Basel. Locate the Black Forest Mts., and proceed with the work somewhat as follows:

Danube R. rises among the Black Forest Mts., near Basel, and flows northeast to

Ratisbon, where it reaches its most northern point, in about the latitude of the mouth of the St. Lawrence R., and the northern boundary of the United States. From Ratisbon the Danube flows southeast quite a distance.

Munich, the capital of Bavaria, is situated on the Isar R., which flows into the Danube from the southwest. It is noted for its telescopes, mathematical instruments, glass and beer.

Inn R. is partly on the boundary between Germany and Austria-Hungary.

From its source to the mouth of the Inn R. the Danube is a German R., but flows from the Inn to Belgrade through Austria-Hungary. Call attention to the fact that between the Inn

and Vienna it is pressed southward by the mountains of Bohemia. The pupils should be able to see for themselves that the basins of the Danube and Elbe are here separated by only a short distance.

Vienna, the capital of Austria-Hungary, is situated on the right bank of the Danube. It is a well-built city, and can boast of having the largest park in Europe, and one of the best universities on the continent. It is extensively engaged in the manufacture of silks, carriages, steam-engines and machinery. The Jews of Vienna control its money market and its press. Pop. 1,104,000.

On the eastern boundary of Hungary the Danube receives the March R. from the north, and immediately after breaks through the Little Carpathian Mts., and flows through Pressburg. It will be noticed that the tributaries of the March rise very close to some of the tributaries of the Elbe, Oder and Vistula. Austerlitz and Olmutz are historical towns on tributaries of the March.

The Danube flows east through Hungary for some distance and then makes a sharp bend to the south.

Buda-Pesth, the capital of Hungary, is situated on both sides of the Danube R., a short distance below the great bend. The two parts of the city are connected by two iron bridges. It is growing rapidly, and has an extensive commerce, due to its position on a navigable river and in the center of a net work of railroads. The principal manufactures are flour, leather, machinery, silks, tobacco, spirits, etc. "Buda-Pesth is insalubrious, and the death rate is greater than perhaps in any other city of Europe." Pop. 320,000.

Drave R. forms the southwestern boundary of Hungary.

Theiss R. rises among the Carpathian Mts., flows west, then south into the Danube.

Save R. rises in the Alps, and for the most of its course forms the boundary between Austria on the north and Bosnia

and Servia on the south. It is about on the same parallel with the Po and northern New York and Vermont.

Let the pupils learn to bound Austria-Hungary, giving all rivers and mountains that separate it from other countries.

In describing the surface it may be well to begin with the great plain of Hungary which forms the central and most important part of the Empire. On the north of Hungary are the Little Carpathian and Carpathian Mts.; the latter merge into the Transylvanian Mts. on the south. East of Hungary is the plain of Moravia, and east of that is the plain of Bohemia, surrounded by mountains. The southwestern part of the Empire is traversed by the Alps and their ramifications, hence it is very rough and broken.

The country is well suited to agriculture, and the great wealth of the nation consists in its varied products. The principal crops are oats, wheat, potatoes, sugar-beet, flax, hemp, tobacco and olive oil.

The principal minerals are coal, iron, salt, sulphur, gold, silver, etc.

The manufactures have been named in connection with the cities in which they are carried on.

Let the pupils complete this scheme:

Austria-Hungary.	{	1. Boundaries	
		2. Surface	<div> <div>1. Principal Mountains</div> <div>2. Principal Plains</div> </div>
		3. Rivers	}
		4. Crops	}
		5. Minerals	}
		6. Manufactures	}
		7. Cities	}

SERVIA was until recently a semi-independent state, paying tribute to Turkey, and occupied by a Turkish garrison. As a result of the late Turko-Russian war, it is now an independent kingdom.

The surface is everywhere rocky, hilly, or mountainous, except along the Save.

Agriculture is in a backward state, and manufactures can hardly be said to exist. The peasants are ignorant and superstitious and "firmly believe in vampires, sorcerers and magicians, and in order to guard against their evil influences, they rub themselves with garlic on Christmas eve."

Belgrade, "white city," the capital of Servia, is situated at the junction of the Save with the Danube. Its geographical position insures it considerable trade.

BULGARIA is bounded on the north by the Danube R. and Roumania, on the east by the Black Sea, on the south by the Balkan Mts., and on the west by Turkey and Servia.

It is tributary to Turkey, but makes its own laws and is governed by a Christian prince.

The surface is comparatively level, and the principality could be made, by proper tillage, one of the richest agricultural countries of Europe.

Sophia, the capital of Bulgaria, is situated on the route from Constantinople to Belgrade. It is noted for the number of its mosques and churches.

From Belgrade to Roumania the Danube passes through a succession of gorges for about sixty miles. In some parts of this distance the navigable channel is hardly fifteen feet in width, when the river is the lowest. The most dangerous gorge is at the Iron Gate, where the Danube breaks through the Transylvanian Alps. In the spring of the year, when the volume of water in the Danube is greater than can escape through the gorges above Roumania, the plain of Hungary is apt to suffer from inundation.

ROUMANIA, an independent kingdom, is situated between Austria, Russia, the Black Sea, and the Danube. It now extends to the Black Sea, but none of it is east of the Pruth R., or north of the Danube.

It is pre-eminently an agricultural country, and, thanks to the law of 1863, giving each head of a family a piece of land containing from seven to sixty-seven acres, Roumania is a grain exporting country. The fisheries of Roumania are also profitable.

Bukharest, the capital of Roumania, is situated on a small tributary of the Danube. Next to Constantinople and Buda-Pesth, it is the most populous city in Southeastern Europe.

When within thirty-eight miles of the Black Sea, the Danube turns to the north, and, after flowing some distance, it bends to the east, receives the Pruth R. from the north, and reaches the Sea by several channels. "It annually conveys to the Black Sea a volume of water far in excess of that which is carried down the rivers of all France, and the solids, which it holds in suspension, are sufficient to cover an area of ten square miles to a depth of nine feet. This enormous mass of sand and clay is annually deposited in the swamps and on the banks of the delta, and the slow but steady growth of the latter is thus sufficiently explained."

RUSSIA.—Review what has been learned already about Russia; and in the further study of the country notice that it includes most of the lowland of Europe, and comprises more than half of the continent.

The principal water-shed of Russia extends from southwest to northeast, the highest part of it being formed by the Valdai Hills in the west. As the water-shed is north of the center, the longest rivers flow which way?

The climate of Russia, owing to the exposure of the country to the polar winds, and its remoteness from the beneficent influences of the warm currents of the Atlantic, is very cold. The winters are long and severe in all parts of the empire, and the ground is covered with several feet of snow five or six months in the year, and the rivers are ice-bound. But the summers though short, are very hot, as if to compensate for the dreariness of winter.

Russia is an agricultural country, and is by far the largest grain producer of Europe, and ranks second among the grain growing countries of the world, the United States being the first. Owing to the large area of rich agricultural land that still remains unoccupied, the immigration of Russia is greater

than the emigration, which can be said of no other country of Europe. The principal grains are rye, oats, wheat and barley. In the production of flax and hemp, Russia equals the rest of Europe.

The principal minerals are coal, iron, gold, platinum and copper, which are found in the east and south.

Besides agriculture, the other leading industries are the fisheries and stock-raising.

The chief manufactures are woolens, silks, linens, cotton, metal-wares, soap, glass, paper and porcelain; but manufacturing cannot be regarded as one of the principal industries of the country.

In addition to the places in Russia, already studied, the following may be taken:

Dniester R.

Odessa, the great emporium of South Russia, on the Black Sea, east of the mouth of the Dniester. The principal export is grain; but wool, tallow and flax are also exported in large quantities. The population is somewhat mixed, but the principal foreign element is the Italian. Pop. 200,000.

Dnieper, one of the largest rivers of Russia, rises near the sources of the Duna and Volga, and flows into the Black Sea.

Kiev, the "holy city," one of the great historical cities of Europe, is situated on the Dnieper, about midway between its source and mouth. "It is a place of pilgrimage, and is annually visited by about 300,000 pilgrims."

Crimea, a peninsula, is famous for the Crimean War of 1854-5, between Russia on the one hand, and Turkey, England, France and Sardinia on the other.

Sebastopol, a strongly fortified city, is situated at the southern end of the Crimea. Near it took place the "Charge of the Light Brigade."

Yeni-Kaleh, the strait which connects the Sea of Azov with the Black Sea.

Sea of Azov, a shallow arm of the Black Sea.

Don, a navigable river of Russia, flows into the Sea of Azov.

Caucasus, a heavy range of mountains which form a part of the boundary between Europe and Asia. Russia extends south to Mt. Ararat and the southern bend of the Aras River.

Georgia is the principal Russian province south of the Caucasus. Its surface is very hilly and broken.

Tiflis, the capital of Georgia and of all Trans-Caucasia, is situated on the Kur R., which flows into the Caspian Sea.

Volga, the largest river of Europe, rises among the Valdai Hills, near the sources of the Duna and Dnieper, and flows east and south into the Caspian Sea.

Astrakhan, an important city of Southeastern Russia, is situated on the Volga River. It has some commerce, but is especially noted for its fisheries.

Kazan, the chief city of Eastern Russia, is situated on the Volga, a short distance above the mouth of the Kama R. Standing as it does at the intersection of the great routes from Siberia, the Caspian Sea, and the Baltic, it has an extensive trade, and half the population is engaged in trades and manufactures.

Nizhnee-Novgorod, is a very important city, situated at the confluence of the Oka and Volga. It is noted for the great fair held here annually, and lasting eight weeks. The value of the goods disposed of at these fairs amounts in some years to \$100,000,000. The fair begins July 1.

Oka R.

Moscow, situated almost in the center of the country, on a small tributary of the Oka, is the most famous city of Russia. It covers an area of over forty square miles, but is not built compactly. It has over 360 churches. The Kremlin, "at once a fortress and an aggregate of cathedrals, convents, palaces and barracks, is pre-eminently the monument of the Russian Empire." The czars are crowned in one of the cathedrals of the Kremlin.

Moscow is a great center of the book trade, and millions of works and prints are issued here, and hawked all over the country, or traded for the local produce of the provinces. The city was burned in 1812 for the purpose of dislodging the French from their winter quarters. Pop. 612,000.

Source of Volga R.

Ural R. is on the boundary between Europe and Asia.

Ural Mts. are also on the boundary between Europe and Asia. They are not very high, but consist mainly of several "round-backed plateau-shaped masses of land."

Arctic Ocean, north of Russia.

White Sea is an arm of the Arctic. Notice the short distance from the White Sea to the Gulf of Finland, and the close proximity of their tributaries.

Archangel, the principal city of Arctic Russia, is situated on the Dwina R., twenty miles from its entrance into the White Sea. In spite of the ice which suspends all navigation for seven months of the year, the city exports considerable flax, hemp, oats, timber, resin and tallow.

NOVA ZEMBLA, "New Land," is a large island situated north of the eastern part of Russia. Its only inhabitants are a few Europeans who care for the permanent harbor of refuge established on the Island.

Franz-Joseph Land, a cold, barren group of islands, situated north of Nova Zembla, and almost entirely beyond parallel 80° N. The group is not inhabited.

Spitzbergen, a group of islands southwest of Franz-Joseph Land and north of the North Cape. There are no permanent inhabitants, but the islands are visited during the summer by hunters, naturalists and whalers.

SCHEME FOR THE GENERAL STUDY OF ASIA.

Asia.	1. Boundaries.			
	2. Dimensions.		<div><div>1. Length.</div><div>2. Width.</div><div>3. Area.</div></div>	
	3. Shape.	1. Peninsulas.	<div><div>1. Kamchatka.</div><div>2. Corea.</div><div>3. Malaya.</div></div> <div><div>4. Hindoostan.</div><div>5. Arabia.</div><div>6. Asia Minor.</div></div>	
		2. Capes.	<div><div>1. Northeast.</div><div>2. East.</div><div>3. Lopatka.</div></div> <div><div>4. Cambodia.</div><div>5. Romania.</div><div>6. Comorin.</div></div>	
		3. Bays or Gulfs.	<div><div>1. Pechili.</div><div>2. Tonquin.</div><div>3. Siam.</div></div> <div><div>4. Bengal.</div><div>5. Persian.</div><div>6. Aden.</div></div>	
		4. Seas.	<div><div>1. Behring.</div><div>2. Okhotsk.</div><div>3. Japan.</div><div>4. Yellow.</div></div> <div><div>5. East China.</div><div>6. South China.</div><div>7. Arabian.</div><div>8. Red.</div></div>	
	4. Surface.	1. Plateaus.	<div><div>1. Central Asia.</div><div>2. Iran.</div><div>3. Deccan.</div><div>4. Pamir.</div></div>	
		2. Mountains.	<div><div>1. Himalayas.</div><div>2. Kuen Lun.</div><div>3. Thian Shan.</div><div>4. Altai.</div><div>5. Hindoo Koosh.</div></div> <div><div>6. Caucasus.</div><div>7. Sinai.</div><div>8. Lebanon.</div><div>9. Taurus.</div></div>	
		3. Plains.	<div><div>1. Siberia.</div><div>2. China.</div><div>3. Basin of the Ganges.</div><div>4. Tigro—Euphrates Basin.</div><div>5. Plains of the Aral and Caspian.</div></div>	
	5. Lakes.	<div><div>1. Aral.</div><div>2. Caspian.</div><div>3. Baikal.</div></div>		
	6. Rivers.	1. Obi.	6. Yang-tse-kiang.	11. Ganges.
		2. Yenisei.	7. Cambodia.	12. Indus.
		3. Lena.	8. Menam.	13. Euphrates.
		4. Amoor.	9. Irrawaddy.	14. Tigris.
		5. Hoang-Ho.	10. Brahmapootra.	15. Jordan.

CHAPTER XVII.

GENERAL DESCRIPTION OF ASIA; SIBERIA, JAPAN AND COREA.

Boundaries and Dimensions of Asia.—Observe that Asia is almost an island.

It ranks first of the continents in size.

Its greatest length is about 7,500 miles, its width 5,200 miles, and its area 17,000,000 square miles.

Its population is estimated at 820,000,000.

The outline of Asia is very irregular, and the irregularities are on a grand scale. Its projections afford room for empires, and its indentations contain vast seas.

SURFACE.—The relief of Asia can be easily learned. Its highlands are in the center, and are surrounded by the lowlands of the continent. The plateau of Central Asia is the largest in the world; it is about as large as Europe. This plateau is bounded on the north by the Altai Mountains, which, farther to the east take, the names of Yablonoi and Stanovoi, on the west by the table-land or mountain knot of Pamir, on the southwest by the Himalayas, and on the east by the Yungling and Great Khingan Mountains.

It is traversed by several chains of mountains, the principal of which are the Kuen Lun and Thian Shan. The average elevation of the plateau is 12,000 feet.

The table-land of Iran extends westward from the central plateau to the west coast of Asia Minor, the principal part of it is east of the Persian Gulf, and is bounded on the north by the Hindoo Koosh Mountains. Its average elevation is 5,000 feet.

The Deccan is situated on the great peninsula of Hindoostan. It is bounded on the west by the Western Ghauts, on the east by the Eastern Ghauts, and on the north by the Vindhya Mountains. It is triangular in shape and consists mostly of rolling prairies. Its population is said to be equal in number to that of the United States.

These mountains and plateaus, as well as others of less importance, are rich in minerals. The Altai Mountains furnish gold; India, Thibet and China, silver. The Malay peninsula and adjacent countries are famous for tin, and the three great plateaus produce copper and iron. Coal is found in northern China; diamonds and some other precious stones in Hindoostan and other parts.

FORESTS.—The southern part of Asia is in the main well supplied with forests; the most luxuriant, however, are found east of the Bay of Bengal.

The palms are the most numerous trees, but teak, rosewood, ebony, gutta-percha and many other valuable trees are found in abundance. The betel plant whose leaves are so universally chewed in Southeastern Asia, with the nut of a species of palm and a little shell lime, is plentiful; also the medicinal plants, spices, and dye woods are very valuable.

These forests are the homes of the lion, tiger, elephant, rhinoceros and other wild animals. The varieties of those animals that are found in Asia are larger, stronger and fiercer than those found in other continents.

SIBERIA.—The great plain which extends from the Altai Mountains to the Arctic Ocean, and from the Ural Mountains to Behring Strait is known by the name of Siberia. It is a cold, dreary region facing the north pole, and is inhabited by uncivilized, wandering tribes, and by convicts and *political offenders* exiled from Russia.

A few of the hardier grains and vegetables grow in the valleys of the south, but the northern part of the country is a barren waste, frozen to unknown depths, and never thawing more than a few inches in the short, hot summer. These frozen plains are frequently called *Tundras*. Mining and hunting are the leading occupations of the people.

If we start from the northwest corner of Siberia and travel east we come to the

Gulf of Obi.

Obi River.

Irtish River.

Tobolsk, at the junction of the Tobol and Irtish Rivers, is the capital of West Siberia. The cold is frequently so great that the mercury freezes.

Yenisei River, 2,500 miles in length, flows most of the way through a frozen desert.

Irkoutsik, the largest city of Siberia, capital of East Siberia, and the great center of commerce of northeastern Asia, is situated on the

Angara River. This river is the outlet of

Lake Baikal, which is the largest body of fresh water in Asia; it is about twice the size of Lake Ontario.

Northeast Cape, the most northern point of Asia.

Lena River, one of the great rivers of the world, is five or six miles wide at a distance of 800 miles from its mouth. It was along its banks that so many of the "De Long party" perished a few years since.

Yakoutsik, the commercial center of East Siberia, is noted for its trade in fossil ivory, and the fur of the polar fox. It is said to be the coldest city in the world.

Behring Strait, 36 miles wide.

Behring Sea. Kamchatka Peninsula.

Aleutian Islands, a chain of islands extending from Asia to America, and belonging to the United States. They furnish

annually about two-thirds of the sea-otter skins used in the world, besides large quantities of seal skins and other furs.

Cape Lopatka.

Kurile Islands, a chain of islands extending south from Cape Lopatka to Japan.

Sea of Okhotsk. Saghalien Island. Gulf of Tartary.

Amoor River separates Siberia, in part, from the Chinese Empire.

Sketch the northern and eastern coasts of Siberia, and on the sketch show all places studied.

JAPAN.—The Empire of Japan consists of nearly 4,000 islands. It has an area three times that of Illinois, and a population ten times as large. The three principal islands are

Yeddo, of which Hakodate is the principal city open to foreigners;

Nippon, on which are *Tokio*, the capital, and *Yokohama*, the principal sea port; and

Kiushiu, whose principal city is *Nagasaki*.

Tokio, the capital of the empire, is situated on the island of Nippon, in about the same latitude as Cape Hatteras. Population about 800,000.

Japan may justly be termed a mountainous country. Some of the mountains are over 14,000 feet in height. There are several volcanoes, of which Fusi-yama is the principal one. Much of the surface is unfit for cultivation on account of its rugged nature; some of the mountains abound in gold, silver, copper, and coal.

The climate is semi-tropical, consequently the vegetation is luxuriant in the lowlands. The principal productions are rice, cotton, tea, wheat, barley, Indian corn and silk.

The last third of a century has witnessed great changes in Japan. Previous to that no foreigners were allowed in the country except the Dutch, and they were confined to a few

square rods at one of the ports; now nearly all of the sea-ports, and many of the cities of the interior are open to all.

Beyond these cities, however, they must not go farther than the distance stipulated in the treaties, without permission from the proper authorities. The people are friendly to foreigners, and desirous of adopting the best features of the civilizations of the most enlightened nations, and fitting them to the condition of their own country. Many of the young men are sent to America and Europe to be educated, and often to learn trades which they are expected to teach their countrymen afterwards. Education is receiving much attention, and is being conducted largely by teachers from the United States, England, France and Germany.

Common schools are established; and colleges and normal schools are founded.

The principal normal school for women is under the immediate protection of the Empress. Much, also, is being done both for religion and education, by missionaries who are zealously and successfully planting school houses and churches among the people.

Railroads and telegraphs are in operation, and the convenience of the telephone is appreciated. Expositions and fairs are common, and their influence upon the industries of the country is marked.

Notwithstanding the rapid progress of the nation in the arts and manufactures of the west, many of the old customs still prevail, especially in the interior. The straw cloak and head-dress, worn in wet weather, and making the wearer look like a moving straw stack, are common sights; the married women still stain their teeth black to please their husbands, and both married and unmarried women dress their hair in such an elaborate manner as to necessitate the using of a block of wood for a pillow, in order that one dressing may answer for several days. The neck rests on the pillow and the head "hangs over."

Note: If the boys and girls wish to know more of Japan and its people, let them read "The Boy Travellers in the Far East."

□□TEA.—The Kingdom of Corea occupies the peninsula of that name and a small portion of the continent to which it is joined. Both China and Japan lay claim to the sovereignty of the nation. The people prefer China, and acknowledge its sway by the payment of a merely nominal tribute; but the king of Corea is virtually independent. The kingdom is frequently called "the hermit kingdom," because of its exclusion of foreigners. The country has been opened recently to foreign intercourse by treaty with America.

The surface is mountainous in the north and east. Barley is the only profitable crop in the north; cotton, hemp, flax, tobacco, madder, and indigo are produced in the south. Corean ginseng is the most valuable in the world. Gold, silver, coal, sulphur, arsenic, lead, tin and iron are plentiful; but the mining of the precious metals is forbidden on pain of death. The raising of sheep is also unlawful.

The cart is the principal wheeled vehicle in use; bulls and ponies are used as pack animals. The wealthy travel on horse back and in Sedan chairs.

The houses of the peasants are huts with mud walls and floors and thatched roofs; the wealthy live in houses made of wood.

Cotton and linen goods form the clothing of the people; sandals made of straw or twine, with soles of rawhides, are worn by all classes.

The population is estimated at 11,000,000; *King-ki-Tao* is the capital.

CHAPTER XVIII.

CHINA, ANAM, CAMBODIA, SIAM, AND BURMAH.

Bound the Chinese Empire, naming, in order, the seas that wash its shores.

SURFACE.—The surface of China is low in the east, hilly in the center, and mountainous in the west. The basins of the three great rivers—Hoang-Ho, Yang-tse-Kiang, and Si-Kiang extend through the empire from west to east, and with the mountain systems which separate them, comprise nearly the whole of the country; the mountains are rich in gold, silver, copper, lead, iron and coal.

Parts of the Empire.—The empire consists of China Proper, Manchuria, Mongolia, Eastern Turkestan and Thibet. It is estimated to contain 4,550,000 square miles, and a population of 379,680,000. It should be remembered that these are estimates; the exact numbers are not known.

China Proper is the only division of the country that deserves much attention at our hands. It contains about one-third of the area and four-fifths of the population. It is divided into nineteen Provinces, and these are subdivided into Prefectures, or Counties, and these in turn are divided into smaller divisions corresponding to our Townships. It is claimed that this portion of the empire has 1,000 walled towns.

Manchuria is a region of hills and plateaus, with some fertile prairies. Agriculture is carried on to some extent, but grazing is the principal occupation of the people.

Mongolia, Eastern Turkestan and *Thibet* are situated on the great plateau of Central Asia. They are dry, sterile regions, unfit for agriculture, except a few sheltered valleys. Most of the inhabitants are nomadic in their habits, roaming over the country as the necessities of their flocks and herds demand.

Climate and Crops.—A glance at the map will show that China is in about the same latitude as the United States. The climate is colder than ours on the same parallel, and subject to more sudden changes.

In northern China, wheat, millet, buckwheat, Indian corn, Irish potatoes and cabbages are cultivated. Excellent cotton is produced in large quantities. In southern China, rice, sugar-cane and the tropical fruits abound. Tea and silk are among the leading productions of the country, and form its principal exports. Millet and rice are the main articles of food.

Customs and Habits.—The Chinese are a peculiar people, and differ very much from Americans in their customs and habits.

“When two Chinamen meet, instead of shaking hands with each other, they stand at a distance, and each one shakes his own hands, putting them together and making a churning motion. It is not respectful to take off the hat on going into the house of a stranger; but a stranger, on being introduced to you considers it a mark of politeness to inquire your age.

“The Chinese never use a pen in writing, but a soft brush instead. * * * The ink is kept in a hard cake, and rubbed on a stone with water as it is wanted. A Chinese book begins at the back side, and instead of the lines going across the page horizontally, the first line runs down at the right hand side of the page to the bottom, and then commences at the left of this, and so on until the page is full.

"In Chinese schools there are no questions and answers as with us, but the pupil commits a given lesson to memory, and when the time comes for recitation, walks out on the floor, directly in front of the teacher, either singly or in class, faces about with his *back* to the teacher, and then rattles off the lesson at railroad speed.

"White is worn as mourning, and must not be seen at a wedding. * * * The greatest possible revenge is for a man to kill himself, as a means of punishing the one who has wronged him. It is considered very praiseworthy and meritorious for a wife, on the decease of her husband, to hang herself."*

One of the most injurious habits of the Chinese is their use of opium. This drug is made from the poppy which is cultivated extensively in China and Hindoostan.

Peking, the capital and metropolis of China, is situated on the Pei-Ho River, nearly in latitude 40° N. In size it ranks with Berlin, Vienna and New York, its population being not far from 1,250,000.

Peking is surrounded by a wall twenty-five miles in circumference, and sixty feet high. The city is divided into two parts by a substantial wall which separates the southern or commercial city from the northern or imperial city. The northern city has wide streets; but the southern, narrow and filthy. The most of the houses are only one story high; the floor is of earth or brick, the windows of oiled paper. It may be profitable to remember that this city is in about the same latitude as the capitals of Spain, New Jersey, Pennsylvania, West Virginia, Ohio, Indiana, Illinois and Colorado.

Hoang-Ho, "Yellow River," one of the principal rivers of China, noted for the frequency with which it has changed its bed in its lower course.

Yellow Sea.

*"Letters from Asia"—Bishop Kingsley.

Yang-tse-Kiang, "son of the sea," one of the great rivers of the world, ranks with the Mississippi and Amazon. It rises in Kuen Lun Mountains and drains an area of 750,000 square miles; its basin is estimated to contain a population of 175,000,000, or three and a half times that of the United States. It is 2,900 miles in length; and at a distance of 200 miles from its mouth is five miles wide.

Nan-King, situated near the right bank of the Yang-tse-Kiang River is noted for the manufacture of satin, paper, and the variety of cloth to which it has given its name.

Shang-Hai, an important commercial city.

East China Sea.

Fuh Chau is noted for the manufacture of porcelain, its lead mines, and trade in black tea.

Formosa Island, noted for its exports of rice, camphor, coal, and tea.

Fokien Strait, or Channel of Formosa.

Amoy, a city of Southeastern China, exports tea, camphor, sugar and joss-paper.

Hong-Kong, more properly Victoria, a city situated on the island of Hong-Kong, is one of the great centers of foreign trade in China; both island and city belong to Great Britain.

Canton, the principal city of Southern China, and the commercial emporium of the nation, is situated on Canton, or Pearl River. Its streets average seven or eight feet in width; and 100,000 of the inhabitants live in house-boats on the river. Canton employs 50,000 persons in the manufacture of cloth, 17,000 of whom are engaged in silk weaving. Population nearly equal to that of Peking.

Si-Kiang, or *Hong-Kiang River*.

Macao, a sea port town belonging to the Portuguese, is at the mouth of the Canton River.

Hainan Island belongs to China; its products are sugar, pearls, coral, wax, gold and silver.

Gulf of Tonquin. South China Sea.

Indo-China.—The countries of Anam, Cambodia, Siam, and Burmah, being situated between India and China, and partaking of the nature of both, frequently are spoken of collectively as Indo-China.

Anam consists of three provinces, Tonquin, Cochin China, and Lower Cochin China. The last belongs to the French, who at present claim a protectorate over the whole kingdom. China resisted the attempts of the French upon Tonquin, and although war was not declared, there were several battles in which the Chinese suffered defeat.

Hue, the capital of Anam.

Saigon, the capital of Lower Cochin China.

Cape Cambodia.

Cambodia, or Mekong River, forms the boundary, in part, between Anam and Siam.

Cambodia is a small country in the southeastern part of Asia, having for its capital, *Panompin* which consists largely of bamboo huts.

Gulf of Siam.

Siam is the principal kingdom of Indo-China, it has an area of 300,000 square miles, and a population of 6,000,000. The seasons are, a wet or hot season, and a dry or cool one. The mercury does not often fall below 60° Fahr. Vegetation is luxuriant and plentiful; the forests cover at least one-half of the area; they abound in many valuable woods and herbs.

Rice, sugar, pepper, cotton and hemp are the chief productions.

Menam River, principal river of Siam.

Bangkok, the capital of Siam, extends four or five miles along both banks of the Menam River. The majority of the houses are either built upon rafts floating in the river, or on piles driven along the banks; hence the city's name of the "Venice of the East."

Singapore, "Town of Lions," is said to have represented on its streets all nationalities; ships can be found here loading

for all parts of the world with spices, rattan, oil, etc. "It is a coaling station for the men-of-war of all nations; in it are stored for future distribution the staple products of America, Europe, and Asia." Vegetation is always in the full bloom of summer.

Malay Peninsula, a long, narrow strip of land, belonging to Great Britain, Siam, and a few native princes.

Cape Romania, the southern point of the Malay Peninsula and of Asia.

Malacca, strait separating the Island of Sumatra from the Malay Peninsula.

Bay of Bengal.

British Burmah, or *Pegu*, a country situated along the western coast of Indo-China; it is washed by the Bay of Bengal.

Irrawaddy River, one of the great rivers of Asia, rises in Thibet, and flows south into the Bay of Bengal. Near its source is the greatest annual rain fall of any place in the world; it is said to be fifty feet, or sixteen times that in Chicago.

Rangoon, the capital of British Burmah, situated on the Irrawaddy, has a very extensive trade in rice, petroleum, cotton, and teak timber.

Burmah is the northwestern kingdom of the Indo-China group; it has an area of 200,000 square miles, and a population of 3,000,000. The country is well fitted for agriculture, which is carried on in a very primitive manner. But, owing to the great fertility of the soil, large quantities of rice, maize, millet, wheat, tobacco, cotton and indigo are produced. Mangoes, pine-apples, oranges, custard apples, and papaws are the principal fruits.

The capital of Burmah is *Mandalay*, or *Mandaleh*, most of the houses of which are made of bamboos and mats, and thatched with grass; foreigners only are allowed to live in brick houses.

Note: A good description of the countries of Indo-China is found in Vincent's "Land of the White Elephant," and in Knox's "Boy Travellers in the Far East." Both give a full and pleasing account of the customs, habits and manners of the people.



CHAPTER XIX.

INDIA, BELOOCHISTAN, AFGHANISTAN, TURKESTAN, AND PERSIA.

Boundaries and Dimensions.—India consists of the central one of the three great peninsulas that project southward from the mainland of Asia, and a narrow strip of country along the east side of the Bay of Bengal.

India, or Hindoostan, is 2,000 miles from north to south, and 1900 miles from east to west. It has an area of 1,577,699 sq. mi., and a population of 240,000,000, being equal in both area and population to all of Europe, excepting Russia.

Surface.—The surface of India consists of the basins of the Ganges and Indus, and the table-land of the Deccan; the latter has been described already. From Calcutta up the valley of the Ganges for fifteen hundred miles the country is very level. The Himalayas rise abruptly out of the plain of the Ganges; in these mountains is Mt. Everest, 29,000 ft., the highest land in the world. The valley of the Indus, though much smaller than that of the Ganges, embraces a vast area.

Cultivation and Crops.—Where the nature of the land admits of it, India is carefully cultivated. The great population renders it necessary that, as far as possible, every square foot shall be made productive, hence there are no fences to be seen anywhere in the country.

The peasants, or tillers of the soil, do not live in scattered farm houses as in America, but in villages or hamlets. The houses of the poor are constructed of mud, and have no doors or windows towards the street.

The soil produces two crops a year. Rice, Indian corn,

sugar-cane, cotton, and indigo, grow in the summer; wheat, potatoes, oats, barley and cabbage, in the winter.

GOVERNMENT.—India should not be regarded as one nation, but as a number of nations loosely tied together. Twenty-three different languages are spoken within its borders, and many religious beliefs and forms of civilization exist. The English, though comparatively few in number, are the ruling race. They have arranged the provinces, both those in which they hold absolute sway and those governed by tributary, native princes, into six groups for administrative purposes. These are the Presidencies of Madras, Bombay, Bengal, Northwestern Provinces, Punjab, and the Central Provinces, all of which are governed by a governor-general, who is appointed by the British Government.

Carefully locate and study the following places:

Brahmapootra, one of the chief rivers of Asia, rises north of the Himalayas, flows southeast through Thibet, and then southwest into the Bay of Bengal.

Thibet, a cold, dreary plateau forming a part of the Chinese Empire.

Lassa, the capital of Thibet, and the sacred city of the Buddhists. Here is the residence of the Grand Lama, who is the earthly head of Buddhism. Its latitude is about the same as that of Cairo and New Orleans, but its climate is fully as severe as that of St. Petersburg. Why?

Ganges R., the sacred river of the Hindoos, has its source in the Himalayas at an elevation of 13,000 feet. The lowlands at the mouths of the Ganges and Brahmapootra are called the Sunderbunds. The river overflows its banks every summer, and floods the lowlands along its borders to a width of 100 miles. The villages are kept from being inundated by being built on artificial elevations.

Hoogly R., the principal one of the many mouths of the Ganges, and the one most important to commerce.

Calcutta, the capital and largest city of India, is situated on the Hoogly R.; being the natural outlet for the great basins of the Ganges and Brahmapootra, it has a very extensive commerce. The principal exports are rice, opium, indigo, cotton, raw silk, etc. The streets in the native portion of the city are narrow and crooked, and the houses are small and filthy. The foreign part has wide, well-paved streets, and spacious dwellings. Population about 1,000,000.

Benares, the sacred city of the Hindoos, and the center of Brahminical learning and religion, is situated on the Ganges R. Among its many temples is a large and costly one devoted wholly to the use of monkeys.

Jumna R., the principal tributary of the Ganges.

Allahabad, "the city of God," is situated at the junction of the Ganges and Jumna. It is noted for the great *Melas*, or religious gatherings, frequently held there and generally attended by over a million people.

Delhi, the center of Mohammedan learning and religion in India, is situated on the Jumna R.; it was formerly the capital of the empire of the "Great Moguls," and was noted for its great wealth and splendor.

Agra, a city on the Jumna R., contains the Taj Mahal, the most beautiful building on the earth. The building "looks like a tent of snowy whiteness and rich embroidery let down from heaven into a paradise of earth to be the audience chamber of an angel on an errand of mercy to men."

Eastern Ghauts form the eastern border of the Deccan Plateau.

Godavery R., rises on the east side of Western Ghauts, and flows into the Bay of Bengal. On one of its southern tributaries is

Golconda, noted in the past for its diamond mines.

Madras, one of the principal cities of India, is situated on the Coromandel coast.

Pondicherry; this city and a small tract of adjoining country belong to France.

Palk Strait separates Ceylon from the mainland.

Ceylon, a large island south of Hindoostan, belongs to Great Britain.

The cocoa-nut palms are very abundant on the island, and are to the people, food, drink and clothing; the bread-fruit and cinnamon tree grow here, and the nutmeg finds here its "native land." Coffee is at present one of the staple productions of Ceylon, and pearl fisheries are carried on along its shores.

Cape Comorin, the southern point of Hindoostan.

Western Ghats, form the western border of the Deccan Plateau.

Goa; this city and a small portion of the adjoining country belong to Portugal.

Bombay, a large city of India, is situated on the Malabar coast; it is next to Calcutta in population and commercial importance; here is a colony of Parsees, or fire-worshipers.

Gulf of Cambay.

Surat is an important city on the Gulf of Cambay.

Vindhya Mts. form the northern border of the Deccan; the northern slopes of these mountains are the great poppy-fields of India.

Arabian Sea.

Indus R., one of the great rivers of India, rises on the north side of the Himalayas, near the source of the Brahmapootra, and flows at first northwest, then southwest into the Arabian Sea.

Sutlej R., the principal tributary of the Indus.

Cashmere, a small country, about the size of Connecticut, is situated on the southern slopes of the Himalayas, between the Indus and Sutlej Rivers. The country is governed by a native prince, under the protection of Great Britain; it is noted for its shawls. Capital, Cashmere.

Make a sketch of India, and on it show all the mountains,

rivers and cities mentioned in the text. If this work is to be made valuable, the sketching must be faithfully attended to.

Beloochistan,—"the land of the Beloochees," is a mountainous country west of India, and occupies the southeast corner of the table-land of Iran.

The climate and productions vary with the elevation. In the low, hot plains rice, sugar-cane, cotton, and tobacco are produced; while in other parts wheat, barley, madder, melons, pomegranates and asafetida are the principal productions.

The people are not very highly civilized, but understand some of the ruder arts and manufactures. They live in tribes, each subject to its own chief, and all subject to the "Great Khan of Kelat," whose rule is absolute.

The capital is Kelat.

Afghanistan,—"the land of the Afghans," is a country north of Beloochistan, which country it so closely resembles that no separate description is necessary. The people are very brave, as was shown recently by the resistance they offered to Great Britain, which had invaded their country. In the northern part, the Hindoo Koosh, a great chain of mountains, extends westward from the Kuen Lun Mts. The capital is Cabool.

Independent Turkestan,—"the land of the Turks," is a country lying north of Afghanistan and Persia. Russia has recently added all of this country to its own domain, and is now encroaching upon Afghanistan. On the east the country is separated from Chinese Turkestan by the table-land of Pamir. The people, customs, and productions of the country resemble those of Beloochistan and Afghanistan.

Aral Sea.

Amoo R., the principal river of Turkestan, flows into the Aral Sea.

Bokhara, nominally the capital of Turkestan.

Samarkand was the capital of Tamerlane's famous empire, and contains his tomb.

PERSIA is mainly on the plateau of Iran.

Owing to its elevation, the greater part of Persia has a very cold climate in winter, while the lowland along the Persian Gulf has an excessively hot climate in summer. A glance at the map will show that there are no rivers of importance in the country, lack of water being one of the great drawbacks to the nation's prosperity. The principal productions are rice, indigo, madder and tobacco.

The commerce of Persia is considerable, and is carried on largely by means of caravans.

Teheran is the capital.

Strait of Ormuz connects the Persian Gulf and Arabian Sea.

Persian Gulf, situated between Persia and Arabia, has valuable pearl fisheries.



CHAPTER XX.

ASIATIC TURKEY.

Divisions.—Asiatic Turkey may, for convenience, be divided into the Tigro-Euphrates Basin, Arabia, Syria, Asia Minor and Armenia.

The basin of the Tigro-Euphrates was the seat of the famous kingdoms of Babylon and Assyria. The land was irrigated by means of canals and aqueducts, and was brought to a high state of cultivation. But the glory of Babylon and Assyria has departed, the canals and irrigating ditches have been in ruins so long that the location of only a few of them can be fixed. The land is a desert, the home of wild beasts and of a few semi-civilized Arabs.

Shat-el-Arab, a river formed by the junction of the Tigris and Euphrates, flows into the north end of the Persian Gulf.

Euphrates, the principal river of Asiatic Turkey, rises in the neighborhood of Mt. Ararat, flows at first south of west and then southeast until it helps form the Shat-el-Arab.

Ruins of Babylon are situated on the Euphrates. But little is left to mark the site of the once famous Babylon. The city stood on both sides of the river, was in the form of a square, and surrounded by a wall sixty miles in length, three hundred and fifty feet high, and eighty-seven feet thick at the top; it was entered by twenty-five gates on each side. Within were the hanging gardens and the supposed site of the "Tower of Babel."

Ararat, a famous mountain of Armenia, is at the junction of Turkey, Russia and Persia, and partly in each; is the supposed site of the landing of the ark.

Tigris, the second in importance of the rivers of Asiatic

Turkey, rises south of the Euphrates, and unites with it to form the Shat-el-Arab. Many believe that at the junction of these rivers was the Garden of Eden.

Bagdad, formerly the capital of the empire of the Caliphs, was for many years the center of commerce for all the surrounding countries.

Ruins of Nineveh are situated on the Tigris. The site of this once famous city, the capital of the great Assyrian empire, was discovered in the present century. The Rawlinsons are making known to the world much of the history of Nineveh, by deciphering the inscriptions found on bricks, stones and walls.

Mesopotamia, "between the rivers," a name frequently given to the land between the Euphrates and Tigris Rivers.

ARABIA, the most western of the great peninsulas that extend southward from Asia, is bounded on the north by Syria.

Surface. Parallel to the coast, and a short distance from it are ranges of low, barren mountains. Hemmed in by these mountains are extensive, sandy deserts, dotted by a few small oases; encompassed by these deserts, and forming the heart of the great peninsula is the Nedjed, or fertile land.

A glance at the map will tell us of the scarcity of water, as we find no rivers or lakes of importance in the country. Artificial ponds are constructed, also tanks, in which to save as much of the scanty rainfall as possible, for irrigating purposes.

Productions.—The larger part of the arable land is devoted to the cultivation of the date palm. The date constitutes the principal article of food on the peninsula, and is also shipped to foreign markets. Next in importance is coffee, which is cultivated extensively, both for home and foreign use; it is of a superior quality, and known in the market as "Mocha" coffee. Peaches, apricots and pomegranates are produced in large quantities; millet is the principal grain

The pearl fisheries of Arabia are very valuable; the island of Bahrein in the Persian Gulf is the center of the industry.

The horses of Arabia are noted especially for their beauty and endurance, and are prized highly by their owners. The camel is the most useful animal of the peninsula; the swiftest and most docile variety is known as the dromedary which is kept for riding purposes, for it is able to go six or eight days without water. The ostrich is the most remarkable bird in the country, and is a source of revenue to the Bedouins.

Government.—The people of Arabia may be divided into two classes,—the Bedouins, who live a nomadic life and depend upon their flocks and herds for a livelihood, and the fixed Arabs who live a settled life, till the soil, and build cities.

The peninsula is occupied by several tribes, each having its own chief who is styled Emir, Imam, Shereef, or Sultan, according to his power. There are at present three Sultans who are recognized as superior in power to the others, and their dominions are sometimes called kingdoms. A narrow strip along the Red Sea is the only part of Arabia that acknowledges the Turkish rule, although the rulers of the other portions of the peninsula send presents every year to the Sultan of Turkey.

Muscat, the capital of Oman, is at the entrance to the Persian Gulf.

Aden, a city in the southwestern part of Arabia, is on the Gulf of Aden; it belongs to Great Britain, and commands the south entrance to the Red Sea.

Strait of Bab-el-Mandeb, “the gate of tears.”

Mocha, a city on the Strait of Bab-el-Mandeb, noted for its export of coffee.

Mecca, the sacred city of Mohammedanism, is in the western part of Arabia some distance from the coast. It is the birthplace of Mohammed, and all good Mohammedans pray with their faces towards Mecca. In order that no mistake

may be made, all Mosques are built with a niche in the side that is towards the sacred city.

Medina, north of Mecca, is the burial place of Mohammed.

Sinaitic Peninsula, situated between the two horns of the Red Sea, is a barren region covered with naked rocks and Alpine precipices, and intersected by narrow defiles and sandy valleys, or "wadies." Its importance is due to its association with the history of the Jews. On it Moses received the Ten Commandments, and organized the Jewish Church.

Gulf of Suez, the northwestern horn of the Red Sea; it is believed that this is the part of the Sea, crossed by Moses and the Israelites in their exodus from Egypt; it is connected with the Mediterranean Sea by the Suez canal.

SYRIA.—The country bordering on the east end of the Mediterranean Sea, and extending eastward to the Tigris-Euphrates Basin, is known by the name of Syria. In ancient times it was divided into *Palestine*, *Phoenicia* and *Syria Proper*.

Palestine extended northward from Arabia along the Mediterranean about two-fifths of its width. Phoenicia joined Palestine on the north, and extended north an equal distance. Syria Proper was north and east of Phoenicia, reaching north to the Gulf of Iskenderoon, and east to the valley of the Euphrates.

Modern Syria is of comparatively little value to the world. The mildew that has blighted all lands over which the Turk holds sway has not spared this. Hence, it is advisable that more time be given to the geography of Syria as it *was*, than to that of Syria as it *is*. It has a history; and, since that history has modified and largely determined the history of the nations of Christendom, the leading geographical features of the country should be noticed.

Palestine is the southern division of Syria, and is situated

on both sides of the Jordan River. It consists of a great table land which extends through its entire length, and two narrow strips of lowland; one of these is along the Mediterranean, the other is the narrow valley of the Jordan.

The geography of Palestine is studied so much in connection with Sunday School work, that but few facts and places need be mentioned here; the following ones are suggested:

Jordan, the principal river of Palestine, and the one of all the rivers of the world whose name is most widely known, rises among the Anti-Lebanon Mts., and flows south through the Sea of Galilee into the Dead Sea.

Sea of Galilee, an expansion of the Jordan River, about thirteen miles long and half as wide.

Dead Sea, a lake or inland sea, that forms a part of the eastern boundary of Palestine. It has no outlet, hence its waters are salt. The surface of the Dead Sea is 1300 feet below that of the Mediterranean.

Jerusalem, the capital of Palestine, and the sacred city of the Jews, is situated on the highest part of the great tableland, west from the north end of the Dead Sea. It is noted for the great events that took place there in connection with the Jewish and Christian religions, especially the death of Christ.

Bethlehem, "the house of bread," a small town six miles south of Jerusalem, is noted as being the birthplace of Christ.

Hebron is twenty miles south of Jerusalem, and was the home of Abraham, Isaac and Jacob.

Joppa, the seaport of Jerusalem, is on the Mediterranean.

Gaza, the capital and stronghold of the Philistines, is situated in the southwestern part of Palestine.

Carmel, a mountain which formed part of the boundary between Galilee and Samaria.

Kishon is the principal river of Palestine, that reaches the Mediterranean Sea.

Fezreel, an important city near the source of the Kishon.

Nazareth, a small town of Northern Palestine, is noted for being the home of Jesus.

PHOENICIA was a long, narrow strip of country bordering on the Mediterranean Sea, and bounded on the east by the Lebanon Mts.

The Phoenicians were famous navigators and great colonizers; they were the inventors of the alphabet.

Tyre, a celebrated city of antiquity, is situated on the shores of the Mediterranean. It was a great commercial emporium, but now consists of a village containing about 3,000 inhabitants.

Sidon, an ancient city of great note, situated north of Tyre. It is of no importance at present.

Beyroot, an important sea port, is situated in what was formerly Phoenicia. It is a thriving, busy city, and has an extensive commerce.

Lebanon, a celebrated range of mountains forming the eastern boundary of Phoenicia, and noted for its cedars.

Anti-Lebanon, a range of mountains extending north and south, parallel with the Lebanon range, and east of it. At its south end is Mt. Hermon, the supposed scene of the Transfiguration.

Antioch, the ancient capital of Syria, is situated on the Orontes River. It was here that the followers of Christ were first called Christians.

Aleppo, an important city of Syria, was formerly a great center of trade between Europe and the East.

Damascus, the largest city of Asiatic Turkey, is situated on a beautiful plain at the east base of the Anti-Lebanon Mts. It has a very large caravan trade, and is connected with Beyroot by a good road. It is said to be the oldest city in existence. Pop. 150,000.

ASIA MINOR is a large peninsula at the western ex-

tremity of Asia. It projects westward, forming an exception to the general rule.

Let the bodies of water by which it is washed be named in order; they were learned when Europe was studied.

The surface consists of a high plateau, bounded on the north and south by narrow strips of lowland, and on the west by a low plain of considerable width. The plateau is traversed by several ranges of mountains, of which the Taurus is the principal one.

The climate depends mainly on the elevation. On the table-lands it is very cold in winter; on the plains of the north and west it is temperate, while in the valleys of the south it is excessively hot in summer.

Agriculture is in a very backward state. It is carried on now as it was two hundred years ago. The people seem to be satisfied with their lot, although it is a hard one, and make no attempts at improvement. They are nearly all Mohammedans.

The principal productions are wheat, millet, cotton, wine, olives, silk, and tobacco.

Cyprus, an island in the northeast corner of the Mediterranean Sea, belongs to Turkey, but has been leased by Great Britain for a long term of years.

Rhodes, an island at the southwest corner of Asia Minor; it is noted for the "Colossus of Rhodes."

Scio, ancient Chios, an island on the west coast of Asia Minor.

Smyrna, the principal city of Asia Minor, is situated on the west coast. South of it is the site of Ephesus, and a little to the northeast is the site of Sardis.

Dardanelles. South of the west end of this strait is the supposed site of Troy.

Marmora. *Bosporus*. *Black Sea*.

Halys, the principal river of Asia Minor.

Trebizond, an important city, is situated in the northeastern part of Asia Minor, on the Black Sea.

ARMENIA is a mountainous country lying east of Asia Minor. The most of it belongs to Turkey, but parts of it have been annexed to the dominions of Persia and Russia.

Ararat, highest mountain of Armenia, is a point of contact of Turkey, Persia and Russia.

Erzeroum, the only city of importance in Armenia, is situated on a branch of the Euphrates River.



CHAPTER XXI.

AFRICA.

Africa is situated southwest of Asia, to which it is connected by the Isthmus of Suez. It is the second of the continents in respect to size, but it is the least of all in importance.

It bears a marked resemblance to South America, in form. Its coastline is more regular even than that of South America, and contains fewer good harbors.

Let the pupils name, *in order*, the bodies of water which surround this continent.

The surface of Africa consists of a great plateau, which approaches near to the ocean on all sides, leaving but a narrow strip of lowland along the coast. The plateau is higher in the south than it is in the north, and is surrounded by mountain ranges, of which the Atlas Mountains in the north, the Kong Mountains in the west, and the Mountains of the Moon in the east are the principal ones. Mount Kilimanjaro, 18,715 feet, is the highest point of land in Africa.

The Northern part of the plateau consists of the Sahara Desert, some parts of which are below the level of the Sea. The Sahara must not be conceived of as one vast expanse of sand, in which no rain ever falls, and on which no vegetation ever appears. Much of it is of this character, but the many oases by which it is dotted afford recruiting places for both man and beast. Wherever a spring is found, luxuriant vegetation gladdens the eyes of the weary traveler. But in a land in which three or four years may pass by without any rain, springs are apt to be scarce. In several parts of the Sahara no rain ever falls, and were it not for the wells that are dug, gen-

erally at two or three days travel from each other, these regions would be impassable.

Owing to the nature of its surface, the rivers of Africa are obstructed by falls and rapids, and consequently, with the exception of the Nile, they are of little importance to commerce.

Africa lies almost entirely within the tropics, and is the hottest of the continents. The difference of temperature between different parts of the continent is due to the influence of altitude rather than of latitude. The climate of the west coast is very unhealthy, and proves fatal to foreigners.

Egypt, the most important country of Africa, is situated in the northeastern part of the continent.

The habitable portion of the country consists of the valley of the Nile, and the Delta, or lowland at its mouth. The valley, which has an average width of eight miles, is bordered on the east by the Arabian Desert, which extends to the Red Sea, and on the west by the Lybian Desert, which extends towards the interior of the continent. There is a continual struggle between the Nile and the deserts for the possession of the narrow valley which constitutes the most important part of Egypt.

“Born among the Mountains of the Moon, and cradled in the depths of their mighty caverns, tearing its way through mountain barriers and granite rocks, dashing down cataracts, lashed into foam by narrows and rapids, the Nile at last reaches the calmer, quiet life of the plain, and goes singing onward amid perpetual sunshine, scattering its blessings with a lavish hand, until it is sepulchered in its great ocean tomb,” after a course of 3,895 miles.

The great fertility of Egypt is due to the annual overflow of the Nile. “The rise of the waters begins the latter part of June, or just about the time of the summer solstice. The first indication is a change in the appearance of the waters,

they become red and turbid. About the middle of July they burst the barrier of shore and banks, and spread themselves over the land, till the country looks like a great inland sea, dotted here and there by villages and towns. The latter part of September, the waters begin to subside, and by the end of November the banks hold in check the swollen stream. The rise is about four inches a day, and the decline at about the same rate. These annual inundations leave a rich alluvial deposit, brought down from the upper country, and from the fertile plains of Abyssinia. The great heat of the climate, operating on these fertilizing deposits, produces a most luxuriant vegetation." Thirty-three feet is about the average rise of the river.

Agriculture is carried on in a very rude manner. The principal crops are cotton, maize, durra, wheat, rice, lentils, sugarcane, flax, hemp, tobacco, sesame, opium, melons, oranges, bananas, etc.

The present population of Egypt consists of Copts, Turks, Syrians, Greeks, Jews, and representatives of most of the European nations. The country people, or farmers, are called fellaheen; the singular is fellah. The language of the country is Arabic.

Egypt is nominally a dependency of Turkey.

The *Suez Canal* crosses the narrow isthmus which connects Africa to Asia. It is 100 miles long, and of sufficient width and depth to admit the passage of the largest vessels.

Cairo, the capital of Egypt, is situated on the Nile, five miles from the commencement of the Delta. The streets are narrow and crooked, there being but one in the business part of the city wide enough for carriages. The upper stories of many of the houses project over the lower ones.

The *Pyramids* are on the left bank of the Nile. The principal one is the pyramid of Cheops; it covers an area of about thirteen acres, and is 450 feet in height.

Assouan is a city situated in the southern part of Egypt; it is at the first cataract of the Nile.

Khartoum, the capital of the Soudan, is situated at the junction of the Blue and White Niles. It is the center of the Soudan trade. Ostrich plumes, gold dust, and ivory are brought here from the desert and traded for European and Asiatic goods.

Khartoum has attracted much attention of late because of the war between England and a Mohammedan prophet, who is styled by the people "El Mahdi," or, the teacher. Population 50,000.

The *Soudan* is a name given to a large region of desert country which extends across Africa from near the Atlantic to the Red Sea. It is inhabited by Bedouin Arabs.

Albert Nyanza and *Victoria Nyanza* are two great lakes of Central Africa; they are drained by the Nile River.

Lake Tanganyika is situated south of Victoria Nyanza.

Alexandria, the chief commercial city of Egypt, is situated on the Mediterranean Sea, near the western mouth of the Nile.

The Barbary States—Are Tripoli, Tunis, Algeria and Morocco.

The surface is level along the Mediterranean, but in the south it is hilly and broken, being influenced by the Atlas Mountains.

The lowlands are very fertile and produce large crops similar in kind to those of Egypt. The highlands afford excellent pasturage, being fairly well supplied with rain.

Tripoli, the capital and principal seaport of Tripoli, on the Mediterranean Sea. The city has considerable commerce, and manufactures carpets, woolen goods, leather, and potash.

Tunis, the capital and chief seaport of Tunis, has considerable commerce, the principal exports being soap, wool, cattle, sponges, wax, gold-dust and ivory. The city is situated about three miles southwest of the ruins of ancient Carthage.

Cape Blanco, the most northern point of Africa, is in Tunis.

Algiers, the capital and principal seaport of Algeria.

The country of Algeria belongs to France; and the French have greatly modified and improved Algiers. It has wide and well-paved streets, beautiful parks, and splendid public buildings. Its commerce is very important.

Fez, the capital of Morocco, is situated about 85 miles south of the Mediterranean. "The streets are narrow, dark, and extremely dirty. The houses are high, with flat roofs, on which the families spread carpets in summer to enjoy the cool breezes of the evening." The city contains over 200 mosques.

Morocco, an important city of Morocco, is noted for the manufacture of "Morocco leather."

Strait of Gibraltar.

The *Madeira Islands* are west of the northern part of Africa, and belong to Portugal.

The *Azores* are northwest of the Madeira Islands, and also belong to Portugal.

The *Canary Islands* are situated close to the west coast of Africa. Teneriffe (the largest of the group) contains an area of 1,000 square miles, and has a mountain 12,182 feet in elevation. The Canaries belong to Spain.

On the western coast of Africa are several European settlements, no one of which is of sufficient importance to demand much attention at our hands.

Cape Verd, the most western point of Africa.

Cape Verd Islands are close to the Cape; they belong to Portugal.

Liberia, a republic on the west coast of Africa. It was founded as a colony of free Negroes by the American Colonization Society. The abolition of slavery in the United States, and the enfranchising of the Negro, have caused immigration to Liberia to fall off considerably.

Monrovia, the capital of Liberia, is on the coast.

Gulf of Guinea.

Guinea, a somewhat indefinite region of country, along the Gulf of Guinea. It is occupied mainly by native States whose inhabitants are still in a state of barbarism.

The *Niger River* flows into the Gulf of Guinea.

Timbuctoo, a city of Soudan, is situated eight miles north of the Niger River. It is a center for the trade between the native States in the interior, and North Africa.

Congo, the largest river of Africa, rises in the interior of the continent, and flows into the Atlantic. The leading maritime nations of Europe are very much interested, at present, in establishing commercial stations in the basin of the Congo.

St. Helena Island is situated in the South Atlantic Ocean, about 1,400 miles west of the coast of Africa. It was the place of Napoleon Bonaparte's banishment and death. It belongs to Great Britain.

Orange River is the principal river of Southern Africa. Rich diamond mines have been discovered in the valley of this river.

Cape Colony, the southern country of Africa, belongs to Great Britain. The province has several lines of railroad and telegraph, which greatly assist in the development of its resources. The leading industries are agriculture, grazing, and commerce. Wool is the staple article.

Most of the white inhabitants are of Dutch descent, but there are many English and Germans.

Cape Town, the capital of Cape Colony, is situated on the Atlantic. It has considerable commerce, and its streets are well paved and lighted.

Cape of Good Hope is about thirty miles south of Cape Town.

Cape Agulhas is the southern point of Africa.

North of Cape Colony are several small States, some of which belong to Great Britain; and the others are free States, occupied mainly by the Boers, who are descendants of the

early Dutch settlers of Southern Africa. England is constantly encroaching upon these free States, and seems determined to annex them to its own dominion.

Mozambique Channel separates the Island of Madagascar from the continent of Africa. This island constitutes a Kingdom and is ruled over by a native monarch. The people are semi-civilized, and carry on agriculture, and some rude manufactures. The capital is Tananarivo.

The *Zambezi River* is the largest river of Africa, that flows into the Indian Ocean.

Zanzibar is the principal native State on the east coast of Africa. The principal productions are cloves, rice, cotton, and sugar.

Zanzibar, the capital of Zanzibar, is situated on an island of the same name. It has a very extensive commerce, being the "Chief market in the world for the supply of ivory, gum copal and cloves." Population 80,000.

Cape Guardafui is the most eastern point of Africa.

Gulf of Aden. Strait of Bab-el Mandeb.

The Red Sea.

Abyssinia is a mountainous country of Eastern Africa. Some parts of the country are fertile and produce fair crops of maize, barley, wheat, millet, and pease. The Abyssinians are semi-civilized, and have made but little progress in the arts of civilization.

The Isthmus of Suez.

Let the pupils name, *in order*, all countries bordering on the Mediterranean Sea, giving the capital of each.



CHAPTER XXII.

AUSTRALIA, AND THE ISLANDS OF THE PACIFIC.

Australia, the smallest of the six continents, is situated south of Asia. It is about as large as the the United States, excluding Alaska. The entire continent belongs to Great Britain.

The coast line is very regular, there being no indentation of any note, except the Gulf of Carpentaria in the north.

The surface is a low plateau which is generally lower in the interior than it is along the margins. The eastern margin is the highest, and has an average elevation of 1500 feet.

The climate is warm, but healthful. The absence of high mountain ranges in the interior causes a marked deficiency in the rainfall. The narrow strip of country east of the plateau has a plentiful supply of rain, but some parts of the interior receive little or none, the most favored regions receiving barely enough to afford good grazing.

The rivers are few and unimportant, and most of the lakes are salt, and so shallow that many of them dry up at times.

The continent has rich deposits of gold, copper, iron, tin, manganese, and bituminous coal, and mining is one of the principal industries.

QUEENSLAND.—The colony of Queensland occupies the northeast part of Australia. Agriculture is carried on to some extent, but cattle-raising and wool-growing are the leading industries.

Brisbane is the capital.

NEW SOUTH WALES—Is situated south of Queensland. It is well adapted to farming. The chief productions are wheat, barley, Indian corn, arrowroot, potatoes, sugar-cane, tobacco, and grapes. The great wealth of the colony, however, consists in its herds and flocks.

Sidney, the capital and the oldest town in Australia, is on Port Jackson. The city has three colleges and a university; it has an extensive commerce.

VICTORIA—The smallest, but the most populous of the Australian colonies, occupies the southeastern part of the continent. "Gold mining is the principal occupation, though cattle-raising and agriculture are extensively pursued." Mount Kosciusko (7,285 feet), the highest point in Australia, is in this colony. Victoria and New South Wales are well supplied with railroads.

Melbourne, the capital of Victoria, and the most populous city in Australia, is situated in the southern part of the colony.

The commerce of the city is very important, and its manufacturing establishments give employment to about 40,000 persons. Population 282,000.

SOUTH AUSTRALIA—Is situated west of Victoria and New South Wales. The southern part of the colony is well adapted for the growth of the cereals and all kinds of fruit. The vine, tobacco, hops and indigo are among the leading crops. Large quantities of wine are exported annually.

Murray, the principal river of Australia, is navigable for small vessels, for about eight months in the year.

Adelaide, the capital of South Australia, is situated in the southeastern part of the colony. It is the terminus of several lines of railroad.

WEST AUSTRALIA—Occupies the western part of the continent. Only a small portion of the country is inhabited.

The principal exports of this colony are wool, copper, pearl-shells, and sandal-wood. Perth is the capital.

PAPUA OR NEW GUINEA—Is a large island situated north of Australia. But little is known of the interior, and only parts of the coast have been explored by Europeans. Holland claims the eastern half of the island. The inhabitants are chiefly a black, woolly-haired race. Birds of paradise, pearls, gold, fine woods and resins are obtained from the island.

CELEBES.—An island of the East Indian Archipelago, is situated west of Papua. The coast line is very irregular, and the surface mountainous.

The principal productions are coffee, cocoa, rice, and millet. The island is occupied by native tribes and a few Dutch. Holland claims jurisdiction over the whole of it.

BORNEO.—One of the largest islands of the world, is situated west of Celebes.

The interior of the island has been only partially explored, but the surface is believed to be rough and broken.

Rich deposits of gold and coal have been discovered.

Gutta-percha, camphor, cinnamon, cloves, nutmegs, and betel nuts are among the leading products.

The eastern end of Borneo is occupied by a native State, governed by a Sultan; the Dutch control the western end.

SUMBAWA—One of the Sunda Islands, is situated south of Borneo. The principal products are rice, tobacco, edible bird's nests, sapan, gold-dust, pearls and sulphur. Holland claims the island.

JAVA—The most important (though not the largest) island of the East Indian Archipelago, is south of Borneo. The

natives (who are of the Malay race) have made considerable advancement in civilization. They understand farming and manufacturing, and are successfully engaged in those pursuits. The Javanese cultivate rice, maize, ground nuts, yams and cassava. The principal crops cultivated by the whites are coffee, sugar-cane, tobacco and tea. Java and Sumatra rank next to Brazil in the production of coffee. The island is governed by a Dutch "Resident," assisted by an army of inferior officials.

Batavia, the capital of all the Dutch possessions in the East, is situated on the east end of the island of Java. Its commerce is very extensive, the chief exports being coffee, sugar, tobacco, gold-dust, camphor, tortoise-shell, dye woods, tin, and spices. Population 103,000.

SUMATRA—The most westerly of the Sunda Islands, is separated from the Malaya Peninsula by Malacca Strait. The greater part of the island is occupied by a number of native States, but Dutch influence prevails in the south and east. The principal products are about the same as those of Java.

Philippine Islands—Next to Cuba the most valuable possessions of Spain, are situated east of the southeastern part of Asia. Luzon is the most important island of the group. The productions of the Philipines are about the same as those of the other islands.

Manila, on the Island of Luzon, is the capital and most populous city of the Philippine Islands. The city has an extensive commerce, the most important exports being manila hemp and cordage, tobacco, gold-dust, bird's nests, coffee, tortoise-shell and rice.

TASMANIA—A British colony, is situated south of Australia, from which it is separated by Bass Strait. The soil is fertile, but covered by such dense forests, that the labor of

preparing it for cultivation is very great. The leading products are wool, grain, fruit and timber.

Hobart Town, the capital of Tasmania, is situated near the southeast coast, on the Derwent River.

NEW ZEALAND—A British colony in the South Pacific, is situated southeast of Australia. The colony consists of a chain of islands, only three of which are of much importance. The chief productions are wool, flax, and the ordinary cereals. The aborigines are termed "Maoris." Much attention is paid to education. "State schools are established, in which teaching is free, secular, and compulsory, with certain exceptions, for children between the ages of seven and thirteen. Grants are made for scholarships from primary to secondary schools, for training institutions for teachers and for school buildings."

Wellington, the capital of New Zealand, is situated on the south end of North Island.

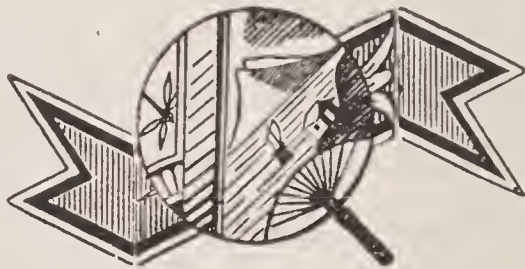
Fiji Islands—A British colony, are situated east of Australia. The principal products are bread-fruit, bananas, cocoa, yams, sugar, cotton and tobacco. The climate is agreeable and salubrious. The capital is Suva.

Sandwich Islands—A group of eight inhabited and four uninhabited islands in the north Pacific Ocean, constitute the Kingdom of Hawaii. The island of Hawaii is the largest one of the group. On it are situated the volcano of Kilauea, whose crater is the largest active one in the world. This crater, or lake of fire, is situated at an elevation of 4,440 feet above the level of the sea. "For some distance before reaching the lake one feels the heat, and in many places has to leap over cracks in the lava, from which sulphurous smoke is continually rising. But not until the lake is reached does its awful grandeur burst upon the tourist, reminding him forcibly of some of Gustave Dore's terrible illustrations in Dante's In-

ferno. From a height of some seventy feet, the eye rests upon a lake nine miles in circumference, and eight hundred feet in diameter, of boiling lava, its waves lashing themselves against its rugged sides, and sending showers of hot, glassy spray high into the air, presenting one of the most fascinating, yet awe-inspiring scenes the world possesses." Mauna Loa, the highest mountain in the Pacific (13,760 feet) and the highest active volcano in the world, is also on this island.

The principal productions are sugar, wheat, cotton, tobacco, arrowroot, and sweet potatoes.

Honolulu, the capital of the Hawaiian Kingdom, is situated on the south side of the island of Oahu, 2,100 miles from San Francisco and 3,440 miles from Yokohama, Japan. The city has considerable commerce, and is an important port of call for vessels trading between the United States and the countries of Eastern Asia.



CHAPTER XXIII.

ASTRONOMICAL GEOGRAPHY.

Geometrical Definitions:—

A *point* is that which has position only.

A *line* is that which has length, without breadth or thickness.

A *straight line* is one that does not change its direction.

A *curved line* is one that changes its direction at all points.

A *surface* is that which has length and breadth, without thickness.

A *plane* is a surface in which, if any two points be taken, the straight line connecting them lies in the surface. It is difficult to make a surface that is a plane in the strict mathematical sense of the term. But the surface of a board, if carefully planed, is very nearly a plane.

A *circle* is a plane bounded by a line all points of which are equidistant from a fixed point within. This point is the *center* of the circle.

The *circumference* of a circle is its bounding line.

Care should be taken to distinguish clearly between the circle and its circumference. *Under no circumstances is the circumference a circle; nor is the circle a line.*

The *radius* of a circle is a straight line drawn from the center to any point in the circumference.

The *diameter* of a circle is a straight line drawn through the center and terminating in the circumference; it is twice the length of the radius.

A *solid* is that which has length, breadth and thickness.

Make clear to your pupils the difference between a mathematical solid and a physical solid, and teach that in this work mathematical terms are used entirely.

A *sphere* is a solid all points in whose surface are equidistant from a fixed point. Is it necessary in this definition to say that the "fixed point" must be within? Why?

The *radius* of a sphere is a straight line drawn from the center to any point in the circumference.

The *diameter* of a sphere is a straight line drawn through the center and terminating in the surface.

Every section of a sphere made by a plane is a circle. If an orange be cut into two parts, each cut surface is a circle.

A *great circle* of a sphere is one that divides it into two equal parts, called *Hemispheres*. All great circles of the same sphere bisect each other.

A *small circle* of a sphere is one that divides it into two unequal parts.

Sphericity of the Earth.—It is not best at this point to say anything about the oblateness of the earth. First let the idea of its rotundity be clearly fixed; this can be modified afterwards by telling why the earth is believed to be an oblate spheroid. We notice six proofs of the earth's sphericity.

1. The surface of the earth rises up between any two distant points on it.

Illustrations.—(a) In looking at a ship coming into port, we first see the sails and masts, and later the hull. If the vessel is going out of port, the hull will disappear first, and the sails and masts last.

(b) Even in a level country the farther above the surface one goes, the greater distance he can see.

(c) In a hilly country the sun shines first in the morning and last in the evening, on the tops of the mountains.

2. We know the earth to be round from east to west because it has been sailed around; and we know by the stars that it is

round from north to south. For if we start from any place on the earth's surface and travel either north or south, the stars in front of us will rise higher and higher above our horizon, while those behind us will sink lower.

How does this prove that the earth is round?

3. Astronomers tell us that the other planets are spheres, and as the earth resembles them in many other respects, it is fair to suppose that it does in this. In what respects does the earth resemble the other planets?

4. It is supposed that the earth was at one time in a fluid state, and all fluids, when left to themselves, assume a spherical form. Give several simple illustrations.

5. The shadow of the earth, seen on the moon in time of an eclipse, is always circular; and a sphere is the only body that will always cast a circular shadow, no matter what position it may be in.

6. Engineers, in laying out canals, have to make allowance for the curvature of the earth's surface.

Law of Allowance.—Eight inches for one mile and, generally, 8 inches multiplied by the square of the number representing the length of the canal in miles. So that for two miles the allowance is $8 \text{ in.} \times 2^2 = 32 \text{ in.}$; for three miles it is $8 \text{ in.} \times 3^2 = 72 \text{ in.}$; and for five miles it is $8 \text{ in.} \times 5^2 = 200 \text{ in.}$, etc.*

Were the bottom of the canal a plane, in what part of it would the water be the deepest?

Motions of the Earth.—The earth rotates from west to east. This may be shown by calling attention to the apparent motion of the sun and fixed stars from east to west. As they are fixed, their apparent motion must be due to the real motion of the earth.

*Steele's "Fourteen Weeks in Astronomy," page 99.

The earth's *axis* is the line on which it rotates. By extending this line indefinitely it becomes the *celestial* axis. It takes the earth twenty-four hours (23 hours, 56 minutes, and 4.09 second exactly) to make one rotation. And as day and night are, caused by this motion, it is called the earth's *diurnal* or *daily* motion. Let the pupils show, using the globe, how the rotation of the earth on its axis causes day and night.

The *poles* are the points at which the earth's surface cuts its axis. The northern point is the *north pole*, and the southern one is the *south pole*.

The *equator* is a great circle of the earth perpendicular to its axis. There can be but one such great circle, and it is midway between the poles. If the plane of the terrestrial equator is extended, it becomes the *celestial* equator.

Parallels are small circles of the earth parallel to the equator. Are they perpendicular to the earth's axis? Why so? How many parallels may there be? In making a map, how far apart must they be placed.

Meridian circles are great circles of the earth passing through the poles. The axis of the earth forms their common diameter; hence, they are all perpendicular to the equator.

Meridians are semi-circumferences of meridian circles, terminating at the poles. Every place on the earth's surface has passing through it a parallel and a meridian.

Latitude is distance north or south of the equator; it is measured on a meridian. Why is it measured on a meridian? The latitude of places on the equator is zero. Latitude near the equator is called low latitude; near either pole, high latitude. All places on the same parallel have the same latitude. If two men, 1,000 miles apart, start at the same moment from the same parallel, and travel due north at the same rate, where will they come together? Why?

Longitude is distance east or west from any given meridian; it is measured on the arc of a parallel. Why measured on the

arc of a parallel? The longitude of all places on the standard meridian is zero. All points on the same meridian have the same longitude. If two men, 1,000 miles apart, start at the same time, from the same meridian, and travel due east at the same rate, where will they come together? Why so?

Every circumference is conceived of as divided into 360 equal parts; each of these parts is termed a *degree*. Since the circumference of a great circle of the earth is 24,899 miles, or in round numbers, a little less than 25,000 miles, a degree of the circumference of the equator equals $69\frac{1}{6}$ miles. But as the parallels are small circles of the earth, a degree of their circumference is less than $69\frac{1}{6}$ miles; and the nearer the pole a parallel is, the shorter will be a degree of its circumference; until at the poles it ceases to have any length; hence, degrees of longitude grow shorter from the equator towards the poles, where they become nothing.

The *zenith* of any observer is that point of the heavens directly over his head.

The *nadir* of any observer is that point of the heavens directly beneath his feet; it is the opposite of the zenith.

The *vertical line* of any observer is the straight line which connects his zenith and nadir.

The *mathematical*, or *rational horizon*, is a great circle of the earth perpendicular to the vertical line of the observer. It passes through the center of the earth, and is 4,000 miles from the point of observation.

The *visible horizon* is the line in which the earth and sky seem to meet. The visible horizon of every observer is supposed to be ninety degrees from him.

Were the observer to stand at either pole, his mathematical horizon would coincide with what other great circle of the earth? Where must the observer be that his horizon may pass through the poles?

Oblateness of the Earth.—We have talked of the earth's sphericity, yet the earth is not a sphere, but is like one; it is a spheroid. There are two kinds of spheroids, oblate and prolate.

An *oblate spheroid* is one whose equatorial diameter is greater than its polar diameter.

A *prolate spheroid* is one whose polar diameter is greater than its equatorial diameter.

The earth is an oblate spheroid. To have fully determined this great truth, may be justly regarded as one of the greatest achievements of science. For since the equatorial diameter of the earth is $7,925\frac{1}{2}$ miles, and the polar diameter 7,899 miles; the "flattening" at each pole must be one half the difference, or $13\frac{1}{4}$ miles. This causes so slight a deviation from the sphere, that the only wonder is that it ever was discovered. The flattening at each pole is about $\frac{1}{4000}$ of the earth's radius, or for our purpose $\frac{1}{3000}$ is sufficiently exact. This proportion on a globe twelve inches in diameter will give $\frac{1}{50}$ of an inch as the flattening at each pole; and on a globe thirty inches in diameter, the flattening will be $\frac{1}{20}$ of an inch, a trifle so insignificant that it is doubtful if even an observant person can tell whether the globe he uses is flattened at the poles or not.

You will see from the above calculation that it is hardly worth while to trouble beginners in geography very much about the "flattening at the poles."

Still, the earth is, in form, an oblate spheroid. We notice four proofs of its oblateness.

1. The vibrations of the pendulum are caused by the attraction of gravitation. The greater the attraction, the more vibrations will the pendulum make in any given portion of time. The nearer we approach the center of gravity of a body and yet be on its outside, the greater will be the attraction. It has been found that the farther we move from the equator, the more vibrations will the pendulum make in any given time.

Hence, the conclusion is that as we approach the poles we are getting nearer to the center of gravity, which in this case is about the same as the center of the earth. Consequently, the polar diameter must be shorter than the equatorial diameter.

2. It is supposed that the earth was at one time in a fluid state; and fluids, when revolved rapidly on their axes, draw up from the ends (or poles), and swell out at the centers (or equators). Give several, simple illustrations.

3. It has been ascertained by astronomers that the other planets are spheroids, and as the earth resembles them in many other respects, it is fair to suppose that it does in this. In what respect does the earth resemble the other planets?

4. It has been ascertained by actual measurement, on the earth's surface, that the farther we move from the equator, the greater distance must we travel to pass over a degree of latitude.

Explanation.—All circumferences have the same amount of curvature; hence, all degrees considered as amounts of curvature are equal. But considered as lines they vary as do the circumferences.

The *day circle*, or *circle of light*, is a great circle of the earth, whose circumference separates the illumined part of the earth's surface from the dark part. It is a great circle, as the sun shines on one half of the earth's surface at all times.

A *diurnal circle* is one whose circumference is described by the sun in its apparent daily revolution around the earth. All diurnal circles are parallels.

The earth not only rotates on its axis, but also revolves around the sun. And as the time which it takes to make one revolution is a year, this motion is called its annual, or yearly motion.

The *earth's orbit* is the path, or line, in which the center of the earth moves in going around the sun; it is elliptical in form, and the earth moves in it from west to east, at the rate of about 19 miles a second.

The *plane of the earth's orbit* is the plane in which the orbit lies; it always passes through the centers of the earth and sun. [Keep the idea of a mathematical plane before the minds of the pupils.]

Declination of the Earth's Axis, and the Consequences.—The axis of the earth is declined $23\frac{1}{2}^{\circ}$ from a perpendicular to the plane of its orbit; and its position is always parallel to itself.

Were the axis perpendicular to the plane of the orbit, the day circle would always pass through the poles, the days and nights would be of equal length at all times and in all places, the vertical ray of the sun would constantly fall on the equator, and there would be no change of seasons. But as the axis is declined from a perpendicular to the plane of its orbit, the vertical ray falls on the equator but twice during the year, March 21 and September 21; these dates are termed the *equinoxes*.

When the vertical ray of the sun falls north of the equator, the sun will shine beyond the north pole and lack of shining to the south pole, as many degrees as the vertical ray falls north of the equator. And when the vertical ray is south of the equator, the sun will shine beyond the south pole and lack of shining to the north pole as many degrees as the vertical ray is south of the equator. The vertical ray reaches its greatest distance from the equator on June 21 and December 21; these dates are named the *solstices*.

The earth is about 3,000,000 miles nearer to the sun at the winter solstice than it is at the summer solstice, yet, owing to the fact that fewer heat rays fall on any given surface in the winter (because of their obliquity) than do in the summer, it is much the colder of the two seasons.

During what months does the vertical ray fall north of the equator? South? Name the principal countries in which it is summer when the vertical ray is south of the equator. Why

do the rays of the sun fall upon the northern hemisphere more obliquely in December than they do in June?

The *tropics* are parallels, $23\frac{1}{2}^{\circ}$ from the equator; and they mark the greatest distance from the equator on which the vertical ray of the sun ever falls. How many tropics are there? Names? Meaning of names? Why are the tropics in their present position?

The *polar circles* are parallels, $23\frac{1}{2}^{\circ}$ from the poles; and they mark the greatest distance which the sun ever shines beyond the poles or lacks of shining to them. Give the names of the polar circles. Why are these circles in their present position.

The *zones* are the belts or great rings into which the earth's surface is divided by the tropics and polar circles. How many zones are there? What is the width of each?

Were the declination of the earth's axis from a perpendicular to the plane of its orbit 10° instead of $23\frac{1}{2}^{\circ}$, what would be the position of the tropics? Of the polar circles? How wide would each of the zones be? How would the temperature of the summers and winters compare with the temperature of those seasons at present?

Were the axis of the earth declined 45° from a perpendicular to the plane of its orbit, how many zones would there be? What would be the width of each? How would the seasons compare in length and temperature with the seasons at present?

From what has now been said it will be seen that the *change of seasons* is due to the parallelism of the earth's axis to itself, its declination from a perpendicular to the plane of its orbit, and the revolution of the earth around the sun.

Notwithstanding that the position of the earth's axis is always parallel to itself, the poles are constantly pointing towards the same points in the heavens. This is due to the fact that the distances from the earth to the fixed stars (the only fixed points in the sky) are so great that, by comparison, the diame-

ter of the earth's orbit (185,000,000 miles) becomes a mere point. The north pole points to the north star, hence, to an observer on the equator the north star will appear in the horizon; to one south of the equator it will be invisible, and to an observer at any point north of the equator, it will appear as many degrees above the horizon, as the point of observation is degrees from the equator.

How many degrees above the horizon will the north star appear to an observer at Chicago? London? St. Petersburg? Where must the observer be, in order that the north star may appear in his zenith?

The day circle always cuts the the diurnal circles of all places, outside of the frigid zones, into two parts; and at the equinoxes it cuts the diurnal circles of *all* places into two equal parts. From the vernal to the autumnal equinox, the larger part of the diurnal circle of any place in the northern hemisphere is in the light, and the nearer the pole a place is the greater will be the part of its diurnal circle which is illuminated. From the autumnal to the vernal equinox, less than half of the diurnal circle of any place north of the equator is in the light; and at the winter solstice, the diurnal circle of any place in the north frigid zone is entirely outside of the day circle.

Which has the longer day in summer, New Orleans or St. Paul? Chicago or London? Paris or St. Petersburg? Which has the longer day in winter? Why so?

In determining the answers to the questions asked in this chapter, let the pupils use a globe, if possible.



APPENDIX A.

SYSTEM OF SURVEY AND DESIGNATION OF THE PUBLIC LANDS OF THE UNITED STATES.

The *public lands* of the United States (consisting of lands belonging to the General Government at the close of the Revolutionary War, together with territories since acquired from the Indians, from several of the States, and from foreign powers) are laid out into squares, the sides of which run truly east and west, and north and south. The squares thus formed are called *townships*.

Each township contains 36 square miles, "as nearly as may be," and is divided into 36 *sections*, each one mile square, "as nearly as may be." A section contains 640 acres. A half-section is a mile long and half a mile wide, and contains 320 acres. A quarter-section is a half mile square, and contains 160 acres.

The survey of each land-district begins by the establishing of a *true meridian* from some prominent point; this is called the *Principal Meridian*. From some point in the Principal Meridian is run a line due east and west, called the *Base Line*.

Starting from the Base Line, the surveyors measure along the Principal Meridian, marking each half-mile point with a "quarter-stake," and each mile point with a "section corner." A "township corner" is established at each six-mile point. In like manner, the half-mile, mile, and six-mile corners are marked on the Base Line, reckoning from its intersection with the Principal Meridian.

In laying out the first township east of the Principal Meridian and north of the Base Line, the surveyors start from the latter, at a distance of six miles from the former, and travel

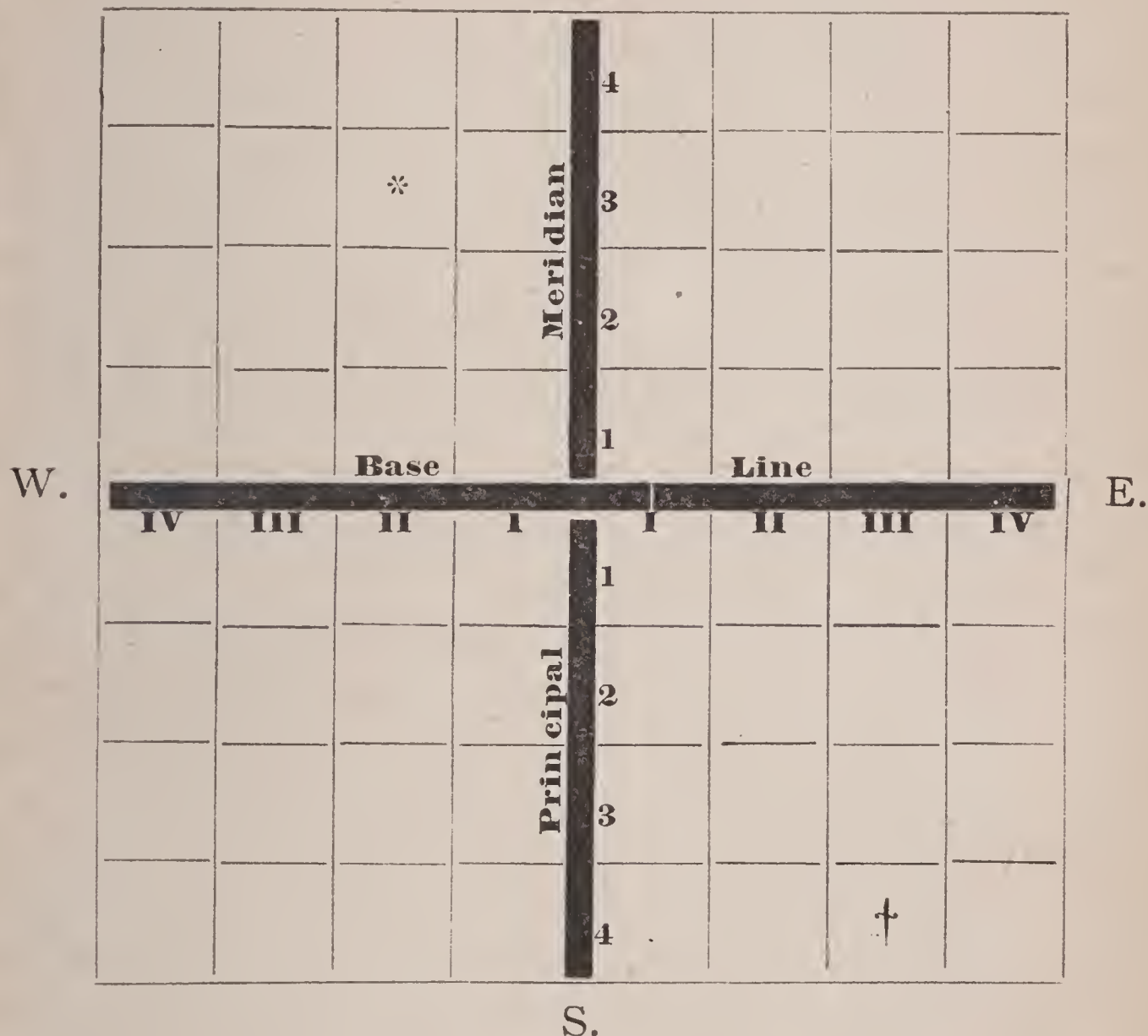
due north six miles, marking the half-mile, and mile points as before. They then go due west to the Principal Meridian. If the township to be laid out is the first one west of the Principal Meridian and north of the Base Line, the surveyors start from a point in the Base Line six miles west of the Principal Meridian, and measure six miles north, and then east to the same meridian. The southeast corner is the starting point in laying out all townships east of the Principal Meridian and north of the Base Line, and the southwest corner is the starting point in laying out those west of the Principal Meridian. In laying out townships south of the Base Line, the northwest corner is the starting point for those west of the Principal Meridian, and the northeast corner for those on the east.

All the townships, situated north or south of each other form a *Range*. The ranges are named by their number east or west of the Principal Meridian. The townships in each range are named by their number north or south of the Base Line.

Thus in diagram No. 1, all of the townships, in the first row east of the Principal Meridian, are in Range I, East; those in the second row are in Range II, East, etc. Townships in the first row west are in Range I, West, those in the second row are in Range II, West, etc.

Diagram No. 1.

N.



Each township in the first row north of the Base Line is Town 1, North; each one in the first row south is Town 1, South; etc. The township marked *, in the diagram, is Town 3, North, Range II, West of the Principal Meridian. The township marked †, in the diagram, is Town 4, South, Range III, East of the Principal Meridian.

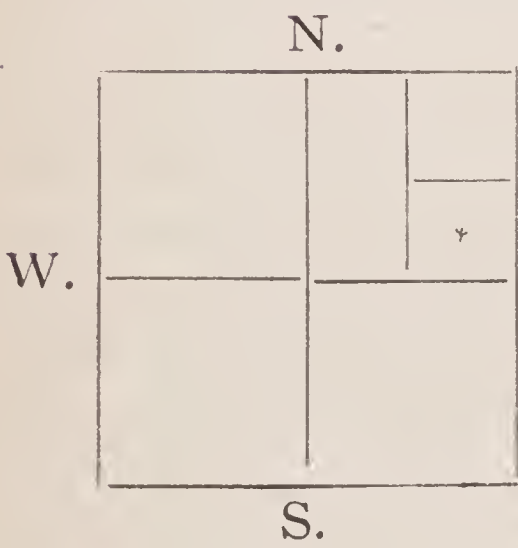
The sections in each township are numbered as in diagram No. 2, from 1 to 36, beginning at the northeast corner, and going west to 6, then east from 7 to 12, and so on alternately to section 36, which will be in the southeast corner of the township.

Since 1852, sections 16 and 36 are set apart for the maintenance of public schools; previous to that date, only section 16 was given for this purpose.

Diagram No. 2.

	N.						
	6	5	4	3	2	1	
	7	8	9	10	11	12	
	18	17	16	15	14	13	
W.	19	20	21	22	23	24	E.
	30	29	28	27	26	25	
	31	32	33	34	35	36	
	S.						

Lands are legally described as follows:



“The southeast quarter of the northeast quarter of section ten in township four south, of range three east of the third Principal Meridian, E. containing forty acres more or less.

The above is often abbreviated thus:

“The S. $E\frac{1}{4}$ of the N. $E\frac{1}{4}$, Sec. 10, T. 4 S., R. 3 E. of the 3d P. M.”

Their east and west boundaries being meridians, it is evident that townships accurately surveyed cannot be squares, but are longer upon the southern than upon the northern boundary, owing to the convergence of the meridians. In view of this fact, the law provides that the sections of a mile square shall contain 640 acres, *as nearly as may be*; and, moreover, provides that “In all cases where the exterior lines of the township

shall exceed, or shall not extend, six miles, the excess or deficiency shall be specially noted, and added to or deducted from the *western* or *northern* ranges of sections or half-sections in such township, according as the error may be in running the lines from east to west, or from south to north."

"In order to throw the excesses or deficiencies, as the case may be, on the *north* and *west* sides of a township, according to law, it is necessary to survey the *section* lines from *south* to *north* on a true meridian, leaving the result in the northern line of the township to be governed by the convexity of the earth and the convergency of meridians."

To provide for the error that would result from the convergence of the meridians and prevent it from becoming so great as to destroy the value of the system, standard parallels, or *Correction Lines* are established at intervals of 24 miles north of the Base Line, and 30 miles south. Such lines when lying north of the principal base, themselves constitute a *base* to the surveys on the north of them; and when lying south of the principal base, they constitute the base for the surveys south of them.

"The convergency or divergency above noticed is taken up on these Correction Lines, from which the townships start again with their proper width. On these therefore are found *Double Corners*, both for Townships and Sections, one set being the *Closing Corners* of the surveys ending there, and the other set being the *Standard Corners* for the surveys starting there."

The 1st Principal Meridian forms the boundary line between Ohio and Indiana. Its Base Line is the parallel of 41° , the southern boundary of the Western Reserve. Only the western and northwestern parts of Ohio are surveyed from this meridian.

The 2d Principal Meridian begins on the Ohio River at the mouth of Little Blue Creek, and runs north, nearly through the center of Indiana. Its Base Line crosses it about twelve

miles north of New Albany. All of Indiana, and that part of Illinois lying east of Range XI, East of the 3d Principal Meridian and south of the middle of Kankakee County, are surveyed from this meridian.

The 3d Principal Meridian runs north from the mouth of the Ohio River, nearly through the center of Illinois. Its Base Line is the extension of the Base Line of the 2d Principal Meridian to the Mississippi River. South of the middle of Kankakee County, the Ranges number east from this meridian to Range XI, and north of the said point they number east to the State Line. The Ranges number west from this meridian to the Mississippi and Illinois Rivers.

The 4th Principal Meridian begins at the mouth of the Illinois River, and runs north to Lake Superior. Its Base Line crosses it at Beardstown. That part of Illinois lying west of the Illinois River and the 3d Principal Meridian is surveyed from this meridian.

All of Wisconsin and that part of Minnesota lying east of the Mississippi are also surveyed from this meridian, with the southern boundary of Wisconsin as Base Line.

Michigan is surveyed from the *Michigan Meridian*, running nearly through the center of the State. Its Base Line commences on Lake St. Clair and ends on Lake Michigan, forming the boundary between the second and third tiers of counties.

The 5th Principal Meridian begins at the mouth of the Arkansas River, and extends through Missouri, Iowa and Minnesota. Its Base Line runs west from the mouth of the St. Francis River, passing a little south of Little Rock, Arkansas. Missouri, Iowa, and Minnesota, west of the Mississippi, and Dakota, east of the Missouri, are surveyed from this meridian.

The 6th Principal Meridian is near the center of Kansas. Its Base Line is the fortieth parallel of north latitude. Kansas, Nebraska, Colorado, and Dakota, west of the Missouri, are surveyed from this meridian.

The other Principal Meridians are named, instead of numbered.

APPENDIX B.

MOTTOES, MEANING OF NAMES, AND SOBRIQUETS OF THE STATES.

ALABAMA—Has no motto. The name means "Here we rest."

ARKANSAS—Motto, *Regnant populi*, "The people rule." The name is derived from Kansas, "Smoky water," and the French prefix *arc*, a "bow." It is called the "Bear State."

CALIFORNIA—Motto, *Eureka*, "I have found it." The name is supposed to have been taken from an old Spanish romance. It is known as the "Golden State."

COLORADO—Motto, *Nil sine Numine*, "Nothing without God." The name means "Red." This is the "Centennial State."

CONNECTICUT—Motto, *Qui transtulit Sustinet*, "He who brought us over sustains us." The name means "The long river." It is called the "Land of steady habits," and the "Nutmeg State."

DELAWARE—Motto, "Liberty and independence." Named in honor of Thomas West, Lord de la Ware. It is popularly known as the "Diamond State," and the "Blue Hen."

FLORIDA—Motto, "In God is our trust." The name means "Flowery." Florida is known as the "Peninsular State."

GEORGIA—Motto, "Wisdom, justice and moderation." It was named in honor of George II of England. It is known as the "Empire State of the South."

ILLINOIS—Motto, "State sovereignty, national union." The name is derived from the Indian word *illini*, "men," and the French suffix *ois*. It is called the "Prairie State," and the "Sucker State."

INDIANA—Has no motto. The name was suggested by its large Indian population. It is known as the “Hoosier State.”

IOWA—Motto, “Our liberties we prize, our rights we will maintain.” Some authorities claim that the name is the French form of an Indian word, meaning “the drowsy,” or “sleepy ones;” others claim that the name means “This is the Land.” It is popularly known as the “Hawkeye State.”

KANSAS—Motto, *Ad astra per aspera*, “To the stars through difficulties.” The name means “Smoky water.” Kansas is the “Garden of the West.”

KENTUCKY—Motto, “United we stand, divided we fall.” The name means “at head of a river.” It is called the “dark and bloody ground,” and the “Corn-cracker State.”

LOUISIANA—Motto, “Union and confidence.” It was named in honor of Louis XIV of France. It is known as the “Creole State,” and the “Pelican State.”

MAINE—Motto, *Dirigo*, “I direct.” The State was named after a province of France. It is popularly known as the “Lumber State,” and the “Pine-tree State.”

MARYLAND—Motto, *Crescite et multiplicamini*, “Increase and multiply.” The State was named in honor of Henrietta Maria, wife of Charles I of England. It is frequently spoken of as the “Old Line State.”

MASSACHUSETTS—Motto, *Ense petit placidam sub libertate*, “By the sword she seeks placid rest in liberty.” The name means “about the great hills.” It is known as the “Bay State.”

MICHIGAN—Motto, *Tuebor*, and, *Si quæris peninsulam amœnam circumspice*, “I will defend.” “If you seek a pleasant peninsula, look around you.” The name means “a weir for fish.” It is popularly known as the “Lake State,” and the “Wolverine State.”

MINNESOTA—French motto, *L'Etoile du Nord*, “The star of the North.” The name means “hazy,” or “smoky water.” This is the “Gopher State.”

MISSISSIPPI—Has no motto. The name means “Great River,” or the “Father of Waters.” It is known as the “Bayou State.”

MISSOURI—Motto, *Salus populi suprema lex esto*, “Let the welfare of the people be the supreme law.” The name means “Muddy water.” It is called the “Iron State.”

NEBRASKA—Motto, “Equality before the law.” The name means “broad and shallow.” It is popularly known as the “Black Water State.”

NEVADA—Motto, *Volens et potens*, “Willing and able.” The name is a Spanish word, meaning “Snowy.” Nevada is known as the “Silver State.”

NEW HAMPSHIRE—Has no motto. It was named after a county in England. This is “The Old granite State.”

NEW JERSEY—Motto, “Liberty and Independence.” The State was named in honor of Sir George Carteret, who had been governor of Jersey Island. It is known as the “Garden State.”

NEW YORK—Motto, *Excelsior*, “Higher.” It was named in honor of the Duke of York. It is known as the “Empire State.”

NORTH CAROLINA—Has no motto. It was named after Charles IX of France. It is popularly called the “Old North State,” and the “Turpentine State.”

OHIO—Motto, *Imperium in imperia*, “An empire in an empire.” The name means “beautiful.” Ohio is known as the “Buckeye State.”

OREGON—Motto, *Alis volat propriis*, “She flies with her own wings.” The name is derived from the principal river of the State, and means the “River of the West.” It is known as the “Beaver State.”

PENNSYLVANIA—Motto, “Virtue, liberty and independence. The State was named in honor of William Penn, “Penn’s Woods.” It is the “Keystone State.”

RHODE ISLAND—Motto, “Hope.” It was named from a fancied resemblance of its principal island to the Island of Rhodes, in the Mediterranean Sea. It is known as “Little Rhody.”

SOUTH CAROLINA—Motto, *Animis opibusque parati*, “Ready in will and deed.” The State was named in honor of Charles IX of France. It is known as the “Palmetto State.”

TENNESSEE—Motto, “Agriculture, commerce.” It was named after its principal river, whose name means “The River of the great bend.” It is frequently called the “Volunteer State.”

TEXAS—Has no motto. The name means “Friendly.” It is known as the “Lone Star State.”

VERMONT—Motto, “Freedom and unity.” The State has the French name of its mountains (*Verd Mont*, “Green Mountains”). It is the “Green Mountain State.”

VIRGINIA—Motto, *Sic semper tyrannis*, “So always with tyrants.” The State was named in honor of Queen Elizabeth, the “Virgin Queen” of England. It is popularly known as the “Old Dominion,” “The Mother of Presidents,” and the “Mother of States.”

WEST VIRGINIA—Motto, *Montani semper liberi*, “Mountaineers are always free.” It is known as the “New Dominion.”

WISCONSIN—Motto, *Civilitas successit barbarum*, “The civilized man succeeds the barbarous.” It has the Indian name of its chief river, whose meaning is “wild rushing waters.” This is the “Badger State.”



APPENDIX C.

CONGRESSIONAL DISTRICTS OF ILLINOIS.

Districts.	Counties.	Districts.	Counties.
I.....	Cook.	XIV.	{ McLean.
II.....	Cook.		{ De Witt.
III.....	Cook.		{ Piatt.
IV.....	Cook.		{ Macon.
V.	{ Lake.	XV.	{ Logan.
	{ McHenry.		{ Coles.
	{ Boon.		{ Edgar.
	{ De Kalb.		{ Douglas.
VI.	{ Kane.	XVI.	{ Vermilion.
	{ Winnebago.		{ Champaign.
	{ Stephenson.		{ Cumberland.
	{ Jo Daviess.		{ Clark.
VII.	{ Ogle.	XVII.	{ Jasper.
	{ Carroll.		{ Crawford.
	{ Lee.		{ Clay.
	{ Whiteside.		{ Richland.
VIII.	{ Henry.	XVIII.	{ Lawrence.
	{ Bureau.		{ Wayne.
	{ Putnam.		{ Edwards.
	{ La Salle.		{ Wabash.
IX.	{ Kendall.	XVIII.	{ Macoupin.
	{ Grundy.		{ Montgomery.
	{ Will.		{ Shelby.
	{ Du Page.		{ Moultrie.
	{ Kankakee.		{ Effingham.
	{ Iroquois.		{ Fayette.
IX.	{ Ford.	XVIII.	{ Bond.
	{ Livingston.		{ Madison.
	{ Woodford.		{ St. Clair.
	{ Marshall.		{ Monroe.
			{ Washington.

X.	{ Peoria. Knox. Stark. Fulton.	XIX.	{ Marion. Clinton. Jefferson. Franklin. Hamilton. White. Saline. Gallatin. Hardin.
XI.	{ Rock Island. Mercer. Henderson. Warren. Hancock. McDonough. Schuyler.	XX.	{ Perry. Randolph. Jackson. Williamson. Union. Johnson. Pope. Alexander. Pulaski. Massac.
XII.	{ Cass. Brown. Adams. Pike. Scott. Greene. Jersey. Calhoun.		
XIII.	{ Tazewell. Mason. Menard. Sangamon. Morgan. Christian.		

SENATORIAL DISTRICTS OF ILLINOIS.

Districts.	Counties.	Districts.	Counties.
I.....	Cook.	XXXII.	{ Douglas. Coles. Cumberland.
II.....	Cook.	XXXIII.	{ Moultrie. Shelby. Effingham.
III.....	Cook.	XXXIV.	{ Mason. Menard. Schuyler. Cass.
IV.....	Cook.	XXXV.....	Adams.
V.....	Cook.		
VI.....	Cook.		
VII.....	Cook.		
VIII.	{ Lake. McHenry. Boone.		
IX.....	Cook.		

X.	{ Winnebago. Ogle.	XXXVI.	{ Brown. Pike. Calhoun.
XI.....	Cook.		
XII.	{ Jo Daviess. Stephenson. Carroll.	XXXVII.	{ Scott. Greene. Jersey.
XIII.....	Cook.	XXXVIII.	{ Macoupin. Morgan.
XIV.	{ Kane. Du Page.	XXXIX.....	Sangamon.
XV.....	Will.	XL.	{ Christian. Montgomery.
XVI.	{ Kankakee. Iroquois.	XLI.....	Madison.
XVII.	{ De Kalb. Kendall. Grundy.	XLII.	{ Bond. Clinton. Washington.
XVIII.	{ Livingston. Ford.	XLIII.	{ Fayette. Marion. Jefferson.
XIX.	{ Whiteside. Lee.	XLIV.	{ Clay. Richland. Wayne. Edwards.
XX.	{ Marshall. Woodford. Tazewell.	XLV.	{ Clark. Jasper. Crawford.
XXI.	{ Rock Island. Henry.	XLVI.	{ Hamilton. White. Wabash. Lawrence.
XXII.	{ Knox, Fulton.	XLVII.....	St. Clair.
XXIII.....	La Salle.	XLVIII.	{ Monroe. Randolph. Perry.
XXIV.	{ Hancock. Henderson. Mercer.		
XXV.	{ Bureau. Stark. Putnam.		

XXVI.....	Peoria.			{ Saline.
XXVII.	{ Warren.			{ Gallatin.
	{ McDonough.	XLIX		{ Massac.
XXVIII....	McLean.			{ Hardin.
				{ Pope.
XXIX	{ Logan.			{ Jackson.
	{ Macon.	L.		{ Union.
				{ Alexander.
XXX.	{ Champaign.			{ Franklin.
	{ Piatt.			{ Williamson.
	{ De Witt.	LI.		{ Johnson.
XXXI.	{ Vermilion.			{ Pulaski.
	{ Edgar.			



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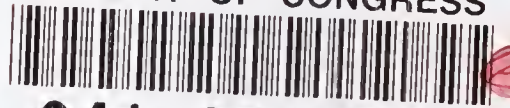
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